

Architecture Library

THIRD SERIES VOL 57 NUMBER 6

APRIL 1950

THE JOURNAL OF THE  
ROYAL INSTITUTE OF  
BRITISH ARCHITECTS



66 PORTLAND PLACE LONDON W1 • TWO SHILLINGS AND SIXPENCE



*A view in Vadstena, Sweden; from a drawing by E. B. Musman [F]*

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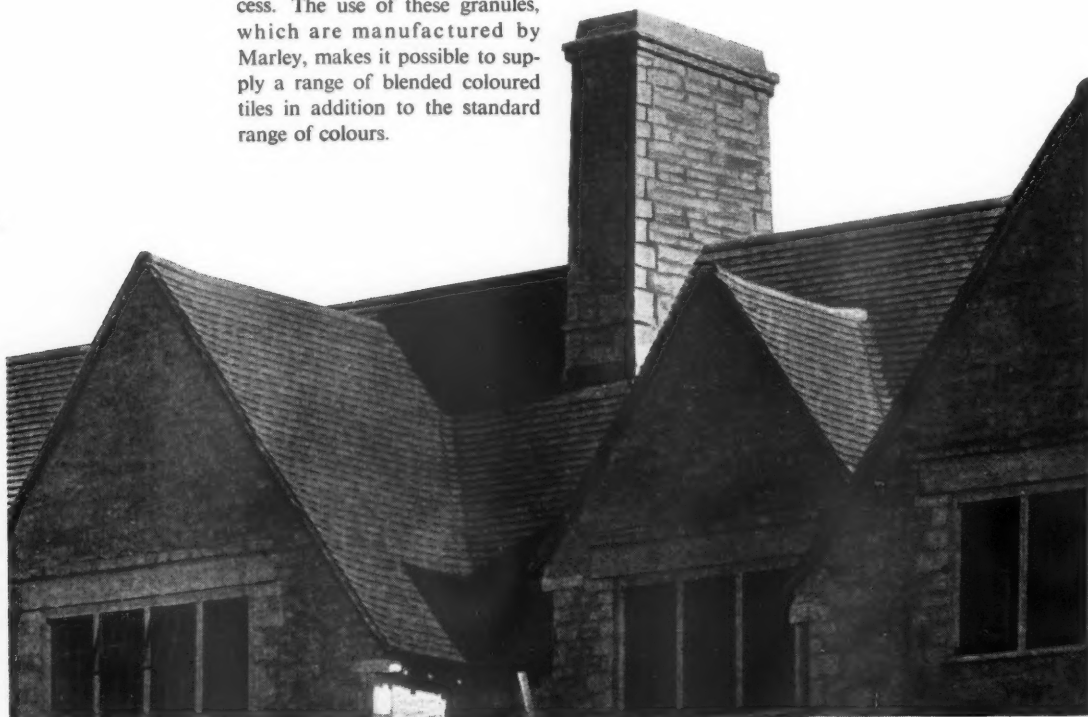


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# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOL 57 NUMBER 6 : APRIL 1950 : 66 PORTLAND PLACE LONDON W1 : TWO SHILLINGS & SIXPENCE

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## Nomination for the Presidency

The Council have nominated Mr. Andrew Graham Henderson, A.R.S.A. [F] as President for the Session 1950-51.

## Discussion on the Town and Country Planning Act

At the general meeting fixed for Tuesday 20 June, following the announcement of the Council election results, there will be a discussion on the working of the Town and Country Planning Act, 1947. This discussion is to enable architects to give their experience of the working of the Act to date.

The Act will be considered under three broad headings and a speaker will be chosen to initiate each section. The President will be in the Chair, and Professor W. G. Holford [F] has undertaken to direct the discussion.

The three headings are: The development charge; the operation of the Act as it affects the architect; the operation of the Act as it affects the planning authority. The evening has been organized to enable members to take part in the discussion, and as much time as possible will be allowed for this.

## The American Mission

A 'report back' public meeting of the Building Industry Productivity Team which visited America last year is to be held at the Kingsway Hall on Friday 9 June at 7 p.m. The speakers will be Robert Lloyd, President of the National Federation of Building Trades Employers, who was leader of the team, Robert H. Matthew [A], Architect to the L.C.C., and F. W. Beazley, of the National Federation of Building Trades Operatives. It is hoped that the Minister of Works will take the chair and that His Excellency the United States Ambassador will speak also. The report of the team is to be published in May. Its recommendations will be discussed at the meeting.

## Wessex Architecture 1850-1950

To commemorate the centenary of the Bristol Society of Architects an exhibition, *One Hundred Years of Architecture in Wessex*, was opened on 3 April at the Bristol Art Gallery by Mr. John Betjeman. The Bristol Society, and in particular Mr. Lance Wright [A], have been collecting for some time photographs of the very interesting Victorian architecture of the region, specially of the 'Bristol Byzantine' commercial buildings. An article by Mr. Wright on the history of the Bristol Society, illustrated with some of the photographs, is published on pages 225-229 of this JOURNAL. A report of the proceedings at the opening ceremony of the exhibition is published on page 244. The exhibition will be on view at the British Architects' Conference in June, for which it will be transferred to the Pump Room, Bath.

## The British Architects' Conference

The Conference organizers have now made further arrangements with regard to the visit to the Theatre Royal on Saturday 10 June. A block of seats has been reserved provisionally for Conference members; tickets are 6s. each; applications for tickets should be sent to the Secretary, R.I.B.A., together with remittances, as soon as possible. The Old Vic Company will be playing *Tartuffe*.

Members will recollect that the Theatre Royal—a charming 18th century building—was saved from demolition a few years ago by public subscription, the Old Vic Company undertaking its management. More recently the Arts Council of Great Britain gave the money for alterations and modern fire equipment. After the performance on 10 June, Mr. Ralph Edwards will conduct the Conference visitors over the dressing rooms and back stage.

Members are again asked not to delay sending in applications for membership of the Conference (7 to 10 June) on the form enclosed with the March JOURNAL. The closing date for acceptance of the applications is Saturday 13 May, but clerical and administrative work, as well as planning for catering and accommodation, will be greatly assisted if members intending to be at the conference complete and return their applications well before that date.

The Royal Spa Hotel at Bath has been taken over by the Hospital Board and should be deleted from the hotel list.

## Scale of Professional Charges: Computation of Fees on 'Quantum Meruit'

The attention of the Council has been drawn by the Practice Committee to a judgment recently given by Mr. Justice Birkett in the High Court concerning a claim for professional fees under Clause 2 (e) in respect of an abandoned project.

In consequence of this judgment the Council at their meeting on 7 March 1950 on the recommendation of the Practice Committee, approved the addition of the following wording to Clause 2 (e) (i) of the Scale of Professional Charges:

*'Attention is drawn to the fact that it is impracticable to assess fees on the basis of quantum meruit solely in relation to the time occupied. Such relevant factors as the character of the project, the intricacy of the work and the professional experience and standing of the architect should be taken into consideration.'*

As a temporary measure, an amending slip is being inserted in the existing stock of the Scale of Charges, but the wording will be embodied in Clause 2 (e) in the next reprint of the Scale.

## Transport Exhibition Postponed

In view of the fact that in June of this year it would not have been possible to include certain interesting transport projects, it has been decided to hold the Transport Exhibition in February 1951.

### The Public House of Tomorrow

The promotion of a competition for the interior design of a public house, by THE ARCHITECTURAL REVIEW, is a useful focusing of attention on a field of design that has been somewhat neglected. 'Pub' design has been too long dominated by the complex requirements of licensing magistrates, with the result that many of the more recent examples have been dull drinking parlours lined either with decorators' Tudor or with a chromium flashiness. The magistrates' requirements are doubtless necessary, but they have obscured the primary need to make the 'pub' attractive and friendly to customers. The competition is useful both to architects and to the brewers, showing the former that they have something to learn and the latter that the architects have useful ideas to contribute. Unlike many sets of competition drawings, almost all the designs submitted were serious contributions meriting more than a casual glance. There was perhaps a tendency in some cases to a clever artiness, as if the clientele were to consist solely of design-conscious intelligentsia or bright-young-things, but there were many in which the plumber, the lorry driver, the bank clerk or the shoe-salesman would feel at home. It is to be hoped that this competition is the starting point for a renaissance of that purely British contribution to civilization—the 'pub'.

### Exhibition of Hand-Made Furniture

In a room at the Victoria and Albert Museum, next to the public house competition designs, is an excellent little exhibition of hand-made furniture. Staged by the Rural Industries Bureau, this exhibition shows that the village craft of cabinet making is undergoing a revival. The pieces on view came from village workshops all over the country and their design is, in practically all cases, simple and delicate yet traditional without being period copy; their workmanship is impeccable. It is true that the designs are supplied by the Rural Industries Bureau, but it is clear that the craftsmen have appreciated and understood them.

### Library Exhibition of Unidentified Drawings

For the Annual Reception on 28 April a small exhibition of unidentified drawings, selected from the Institute's large and interesting collection of original drawings, has been arranged. The exhibition will be in the Library and will remain on view until Whitsuntide.

The exhibits are a cross section of the considerable number of unscribed drawings which have been acquired by the Institute during the past 115 years. They should prove of exceptional interest not only to members and their friends but also to those of the public who are interested in old master drawings.

Amongst the drawings exhibited are two pen sketches by a fifteenth-century German artist—designs for a tomb and a monastere. There is a drawing of an old cottage which may be a Cotman, and scenic designs of the seventeenth and eighteenth centuries. There is a large and brilliant drawing of Milan Cathedral and an interior of St. Peters, possibly by Pannini. One drawing may be by Stephen Wright and another possibly by Lord Burlington.

The Librarian will welcome any suggestions from visitors which may lead to the identification of the artists.

### Lecture on the Work of Moholy-Nagy

The Royal Institute in conjunction with the Institute of Contemporary Arts is arranging for Mrs. Moholy-Nagy to give a lecture on the work of her husband at the R.I.B.A., 66 Portland Place, on Wednesday 24 May at 6 p.m. Refreshments will be available from 5.15 to 6 p.m.

Mrs. Moholy-Nagy is spending a few days in this country on her way to the Continent, where she is to lecture in Berlin, Dresden and Munich. The lecture at the Institute will be illustrated by coloured slides, and Mrs. Moholy-Nagy will also deal with the work of the Institute of Design and the development of the Bauhaus idea under American influence.

### The Warsaw Conference Cancelled

The International Union of Architects announce with regret that the Conference arranged to take place in Warsaw in September of this year has had to be postponed until 1951. This will cause disappointment to those British architects who had already made application to attend. The British preparations were well advanced, and it is hoped to continue with the production of the exhibition which was being arranged for the Conference, as this will be required for permanent use at the U.I.A. headquarters and there may also be opportunities of showing it in other countries abroad.

### The Preservation of Cathedrals

The Central Council for the Care of Churches announces the formation of a cathedrals' advisory committee for guidance on the preservation or enrichment of cathedral churches.

The chairman of the committee is the Very Rev. D. H. S. Cranage, D.Litt., F.S.A. [*Hon. A.*], chairman of the Central Council. The members are Lord Esher [*Hon. F.*], chairman of the Society for the Protection of Ancient Buildings; Sir Eric Maclagan, K.C.V.O., C.B.E., D.Litt., LL.D., F.S.A. [*Hon. A.*], late Director of the Victorian and Albert Museum; Mr. T. D. Kendrick, D.Litt., F.B.A. [*Hon. A.*], director-designate of the British Museum, and secretary of the Society of Antiquaries of London; Mr. W. H. Ansell, M.C., Past President of the R.I.B.A.; Mr. W. I. Croome; and Mr. F. J. Raby, Litt.D., F.B.A., F.S.A., Fellow of Jesus College, Cambridge, late of the ancient monuments division, Ministry of Works.

### A Brains Trust on Town Planning

An interesting experiment in public relations for architecture and town planning was the holding recently of a brains trust by the High Wycombe Arts Association. The chairman of the Association, Mr. Lesslie K. Watson [*F.*], was in the chair, and the speakers were Mr. Anthony M. Chitty [*F.*], the Town Planning Consultant for High Wycombe, Mr. A. H. Prince, County Planning Officer for Buckinghamshire, and Sir Stephen Tallents [*Hon. A.*], who represented the general public. The meeting was very successful, questions by members of the public—some of them sent in before the meeting—producing very instructive answers. A meeting such as this is a useful way of bringing home to the inhabitants what a good plan can mean to the life of their town.

### 1950-51 Kalendar

A new edition of the Kalendar will be published in the autumn of this year. It is still necessary to restrict members and Students to one address each.

The latest addresses and titles now in the Institute's records will be printed in the new Kalendar, and members and Students wishing to notify new addresses or particulars for publication in the 1950-51 Kalendar are asked to do so not later than 31 May if they are in the United Kingdom and the Republic of Ireland. For those overseas the last date is 30 June. After these dates, no alterations can be made.

### Building Research Congress

A comprehensive congress on building research is to be held in London from 11 to 20 September 1951, and will be the first of its kind ever held. The Department of Scientific and Industrial Research is providing the central organization for the Conference, which is sponsored by the British professional institutions and societies interested in building science and by government departments. Those who wish to receive information of this Congress sent to them directly should notify the Organizing Secretary, Building Research Congress, 1951, Building Research Station, Garston, Watford, Herts.

### R.I.B.A. Diary

TUESDAY 2 MAY 6 P.M. Annual General Meeting.

WEDNESDAY 24 MAY 6 P.M. Lecture by Mrs. Moholy-Nagy on the work of her husband. (See first column on this page.)

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# The 1951 Exhibition

By Hugh Casson, M.A.(Cantab) [F]

Read before the Royal Institute of British Architects 7 March 1950. The President in the Chair

WHAT I remember best about playing tennis is not the contests upon the court (perhaps because they were never upon a very heroic scale), but the preliminary bouts of self-depreciation which used to be fought out on the side lines. Cries of 'Oh, I'm hopeless' or 'Honestly, I can never hit a thing' would eventually rise to such a pitch of aggressive modesty that in all common sense a halt would have to be called and a game made up at last on the assumption that all were equally inexpert.

I find myself in a somewhat similar position tonight, though this time in a positive rather than a negative sense. For this obvious reason. The preparations for the South Bank Exhibition have been a team job in which a very large number of people have been concerned. Cabinet ministers and bargees, brigadiers and script writers, architects and nurserymen, pyrotechnicians and typists, have all been involved, and in a talk of this kind it would obviously be impossible to mention everybody. If, therefore, in the course of my paper a name is not mentioned, or if mentioned is not prefaced with the word 'indefatigable' or followed by some such phrase as 'without whose unfailing, etc.', it is not because such names are forgotten or because the tributes are undeserved. It is just that there is, unfortunately, no time always to give credit where credit is due.

It is time also which prevents me from touching more than a fringe of the subject of my talk. I propose therefore to confine myself strictly to setting out some of the technical problems involved, and to explaining how we have tried to solve them. You will not, therefore, expect me to discuss such questions as whether everybody will find hotel accommodation, whether the Exhibition will be worth its cost, or why for Heaven's sake we are having a festival at all. These are all important and relevant questions upon which I, like you, have views; but this is not the place, I suggest, to air them, tempted though I am to quote (perhaps rashly) the old Duke of Wellington writing of 1851 to a crony a century ago. 'Whether the show will ever be of any use to anybody may be questioned, but of this I am certain—nothing can be more successful.' Having wasted time complaining of my lack of it, let us now get down to business.

This is the first time, I believe, that an exhibition has ever been the subject of a sessional paper. There may, of course, be good reason for this. The subject may seem to some of you a trivial one. Exhibition—

there is something raffish, posturing, even faintly disreputable about the word. Indeed, in certain fields the act of exhibiting is a criminal offence. (Sexologists describe it as 'an aberration, characterized by the irresistible need to display in public, generally under certain conditions of time and place'), and no doubt there are many of you here who remember the childhood advice: 'Don't make an exhibition of yourself.'

Never mind, you may say. It is after six o'clock and we are entitled to relax. We have time at least for a short stroll down one of the minor byways which lead off the great highway of the fine arts. If, in fact, you think that the art of the exhibition is such a byway, like the art of the pastrycook, the coiffeur or the town planner, then, if I may say so, you are lamentably wrong. The converse in fact would seem to be true. Far from being a byway, the art of the exhibition is, I suggest, a bold pioneering pathway hacked by adventurers through the jungle. For over 100 years now, indeed, the exhibition has been the laboratory of architecture, the nursery of new ideas, the testing ground of experiment. As you look back along the architectural road we have travelled since 1848, you will find everywhere the scars left by the enquiring hatchets of the trail blazers, Paxton, Eiffel, Dutert, Gropius and Asplund. Those of you who have read your Giedion—and who in this room is bold enough to admit that he has not?—will remember how convincingly he proves that advances in industrial technique inevitably brought with them advances in structural techniques, so that the history of the exhibition becomes itself a history of structural ingenuity.

The first recorded public exhibition (other than the enterprise described in the book of Esther, when King Ahasuerus threw open his palace for a display of textiles with drinks on the house) occurred in 1798, when a modest People's Festival was held in Paris. There were a few attempts during the first forty years of the 19th century in this country, but the first really organized affair took place almost exactly a century ago, when the Society for the Encouragement of Arts and Manufacture (later to become the Royal Society of Arts) initiated a series of Exhibitions of Industrial Products in 1847, 1848 and 1849. Since among these products were slate slabs disguised as costly Florentine mosaics, an earthenware garden seat designed by Pugin, an iron casting of a stag, and a glass bust of Prince Albert, these exhibitions



The winning design in the Vertical Feature competition. Architects: Powell and Moya [44]

were, naturally, a great success, and it was therefore decided to organize a more ambitious show in 1851. You can see today at the Royal Society of Arts Prince Albert's own minute, written in faded brown ink and dated 26 July 1849, which set the Great Exhibition in motion. It is tempting to linger among centenary comparisons. There was Mr. Henry Cole touring the Midlands in search of exhibits like a Council of Industrial Design liaison officer making a stock list. There were the same gloomy prophecies—Bayswater will become a district of brothels, there will be an influx of undesirables, the buildings will blow down, burn down, or let in water; the same exasperating delays attendant upon all building operations. May I quote here Mr. Punch (obviously in the know) writing in 1850 of another but contemporary project, the Houses of Parliament. 'It is now clear,' says Mr. Punch, 'that Mr. Barry will never finish his structure. Two millions of money are already doomed upon an unsatisfactory and uncertain pile.' There are the same strikes (for 5s. instead of 4s. a day); the same religious objections and disputes over the site, and almost the same contractors and consultant engineers! Let us hope we shall be able to maintain the record of similarity—open as punctually on time, be as fantastically successful, and make as whacking a profit!

For some years now the Crystal Palace has been a monument at which no one has thrown stones; but it was England's last contribution for many years and the leadership passed immediately to France, which has held it almost unchallenged ever since. I wish there was time to trace for you in more detail the rich and adventurous history of exhibition design. Those of you who

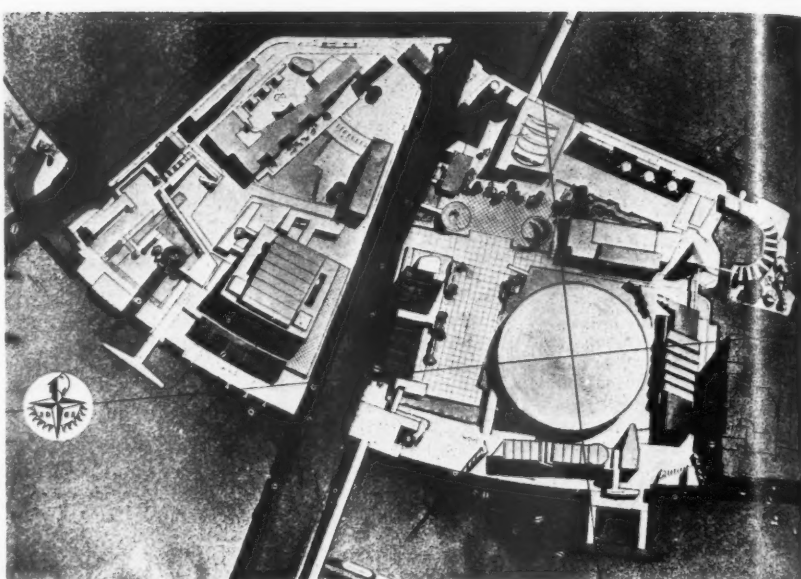
care to pursue it on your own will, I think, come to share my belief that when the great landmarks of the last century's architectural development are charted by future historians, the Galerie des Machines, the Eiffel Tower, Stockholm in 1930 and Paris 1937 will rank high among them. Missing, I am afraid, will be Chicago, Earls Court and Wembley, the last designed, in the words of the official handbook, 'to avoid the almost monotonous beauty of foreign exhibitions', and remembered today only by the Giant Racer and the Prince of Wales in butter.

And so at last we reach 1950, and our plans for the Festival of Britain. But before we deal with the South Bank Exhibition, which is, of course, only one, if the most important, of the Festival events, it is, I think, necessary to sketch briefly the background against which it is being planned. The idea of the Festival was first put forward by Mr. Gerald Barry, then Editor of the *NEWS CHRONICLE*, in an open letter to the Government dated 14 September 1945. Mr. Barry has always been a good friend of architecture and is, as you know, an Honorary Associate of this Institute. But I doubt whether five years ago he realized what a princely patron of our profession he was about to become. A Government Committee reported favourably upon the proposal a year later, and in December 1947 the decision to hold the Festival was announced in the House of Commons. The terms of reference were to demonstrate the British contribution to civilization, past, present and future.

A few months later Mr. Barry was appointed Director-General and an Advisory Council was set up, under Lord Ismay's chairmanship, to draw up a programme. During the first months of 1948 a staff and Executive Committee was gradually built up and Advisory Councils appointed, the most important of which, so far as this Institute is concerned, being the Council for Architecture, Town Planning and Building Research, which serves under the energetic chairmanship of Mr. Howard Lobb. This Council, I may say, had its first meeting in July 1948, has met regularly nearly every month since, and we have come to rely heavily upon the combined wisdom and experience of its members.

By midsummer a draft programme was in existence, designed to be a nation-wide demonstration of Britain's leading achievements in the Arts, Sciences, Technology and Industrial Design, the centrepiece of this programme being what was known at the time as the Combined Exhibition. Our other enterprises, the Festival Gardens at Battersea, the Science Exhibition in South Kensington, the Travelling Exhibitions, are probably well known to you. Each of them is worth a separate lecture to itself, and I hope, particularly, that the Planning and Architectural Exhibition in Poplar will receive in due course detailed study in this hall.

By this time it had become clear that so complex an enterprise could only be planned and mounted by a single authority,



The block plan of the 1951 Exhibition site, South Bank

and it was therefore decided to constitute the Festival of Britain Office as an independent unit. Among the first teams set up within this unit was the Presentation Panel, under the chairmanship of the Director-General, one of the duties of which was to devise the theme of the Exhibition in closer detail and to see that it could be carried into visual effect. A sub-committee, known as the Design Group, was appointed at the same time to prepare the master plan as soon as the story and site were confirmed.

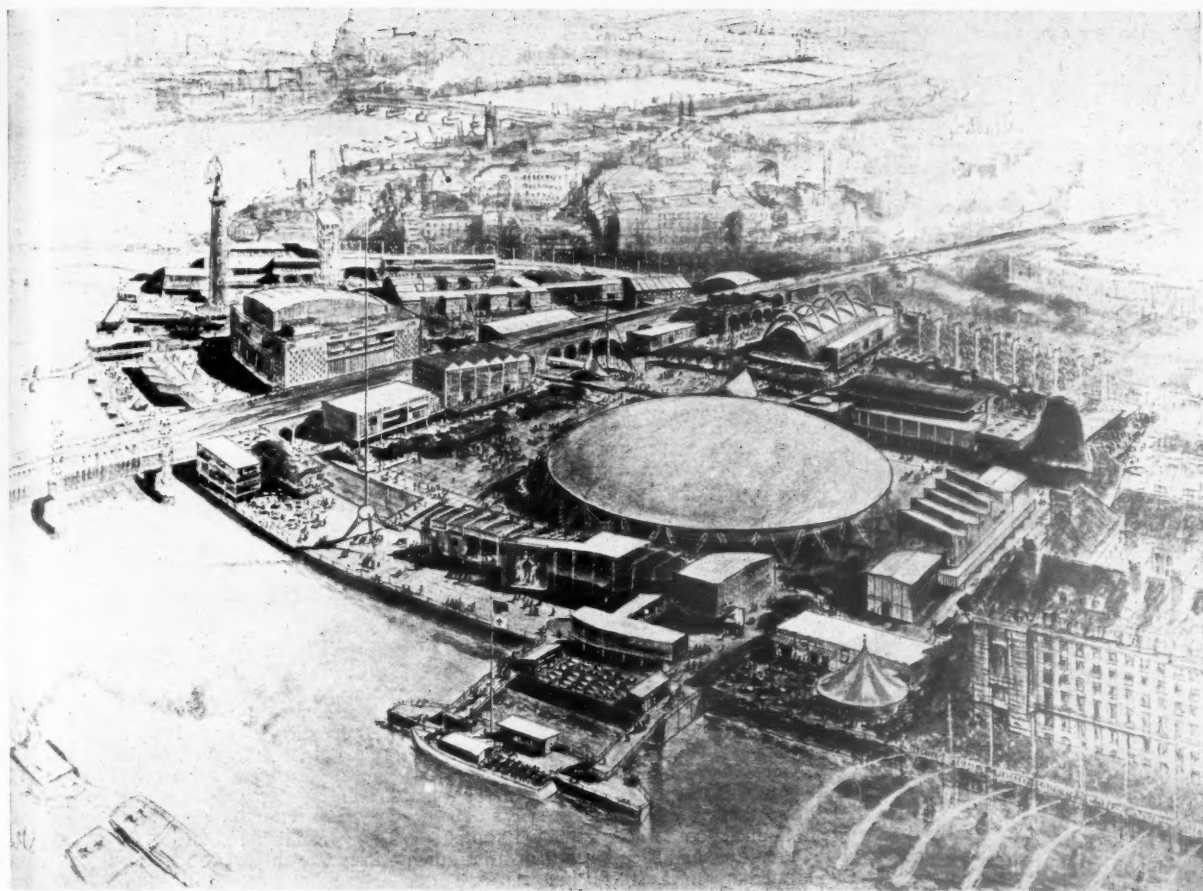
Machinery had therefore been set up, but as the Archbishop is alleged by Mr. Perrott to have said recently in the House of Lords, 'Would it bear fruit?' The fortunes of the Exhibition were not rosy at this time. A number of sites had been suggested and examined, only to be rejected for various reasons. The economic background of the country was uncertain and requests for labour and materials not welcomed by Ministers. These summer weeks of uncertainty were usefully spent, however, in working on the exhibition theme and putting it into a form which could be translated into an architectural programme. In brief, this theme as devised is that the British contributions to civilization result from a combination of two forces, the initiative of the British people and the resources of their land. The background against which this thesis is unfolded is the living working world of today, a particular aspect of which gives the title to each pavilion. It was further agreed that the Exhibition should tell a continuous story throughout the whole of its extent, and that a total area of 400,000 square feet of covered exhibition space was to be aimed at.

One of our first tasks was to break this total figure down into appropriate allotments for each chapter. By mid-August this had been done in broad outline, and the South Bank site, too, seemed to be an

almost certain bet. With the script in one hand and a map of the site in the other the Design Group retired to get out a plan. The group consisted—and happily, if surprisingly, still consists—of two display designers, James Holland and James Gardner, and three architects, Misha Black, Ralph Tubbs and myself.

We used to meet at this time, I remember, in what must have been a footman's bedroom in one of those vast red houses which lie just behind Harrods. Here, revived periodically by Bisodol, for dyspepsia is the occupational disease of all exhibition designers, we sat, hour after hour, staring the gift horse of the South Bank site straight in the mouth. What we saw there was not wholly encouraging. First, the advantages: the magnificent placing in the very heart of London, the river frontage ('an exhibition site,' said *THE TIMES* in June 1850, 'must be accessible by water'), the admirable transport facilities. Then the disadvantages: the tiny area (only 27 acres), the lack of greenery (two dusty wych-elm), the railway bridge which severed the site in two.

As the days went by increasing complications appeared. Half the site, it seemed, was on lease to the Ministry of Works, who were about to start work on an office block. On the other half the London County Council was engaged in the building of a concert hall. Across the full river frontage a contractor was going to build a new embankment. Beneath the railway bridge were a number of snugly housed tenants whose leases and rights of access did not expire for what seemed to be a ridiculously long time, and through the heart of the site ran an uncloseable public right-of-way. Finally, practically the entire site had been allotted to the contractors already working there for their offices, huts, canteens and plant. Obviously there was not a moment



Perspective of the 1951 Exhibition, South Bank. From a drawing by John Lansdell

to lose. Constant, almost daily, meetings took place between the most interested authorities concerned, in particular the London County Council, the Railway Executive and London Transport, the Police and the Port of London Authority. Within a few weeks the situation seemed a little tidier. The Ministry of Works had agreed to postpone starting work on the office block; the right-of-way was to be piped through at high level across the site; the working areas allotted to contractors were revised, preliminary drafting of all the special legislation necessary was in hand, and the Ordnance Survey had agreed to rush through a survey of the site. When not engaged in these negotiations we sat in our attic bedroom while the sheets of tracing paper piled above our knees. The planning problem presented peculiar difficulties, for, as you remember, this was to be a unique exhibition in that it had to be told in narrative form, chapter by chapter. This meant that each pavilion had not only to be of a certain size, but also had to be placed in correct relationship to those which preceded and followed it. We had, so to speak, a number of counters, each of a certain size—so many square feet for agriculture, so many square feet for in-

dustry, etc., and only so long as the size of each counter and its relation to its neighbour in the narrative was maintained, were we free to adopt any system of architectural grouping.

Certain physical practicalities, however, governed our choice. Shipbuilding, for instance, had surely to be by the river front, and transport by the railway bridge. Yet at times the difficulties seemed insoluble. Why all the fuss you may ask. This is the normal problem facing any architect; all planning is no more than the graceful and imaginative arrangement of defined areas within a determined circulation. Well, it is true that in our student days perhaps it would not have taken us long. A few weeks collecting the necessary statistics upon tidal flow, tram accidents, and in comparing the population structure of Lambeth with the unemployment figures for Merthyr Tydfil, followed by a couple of days on the board, and the thing would have been done. As it was, it took us several weeks to define our first ideas. To begin with, we took four simple basic if arbitrary decisions: (i) that the site should be linked visually and, if possible, physically, with Trafalgar Square, and thus with the very heart of London; (ii) that the central dominating structure

should be a saucer Dome, which, of course, must be the largest dome in the world; (iii) that since the theme was divided into two chapters, the railway bridge should act as a dividing agent; (iv) that since the site was so small, no 'grand manner' plan was conceivable. Impressive vistas and monumental compositions we agreed were out of the question in an area which could be crossed on foot in a few minutes and whose extent could be wholly comprehended in a single glance.

Armed with these four weapons, we set upon the problem. We soon discovered that we were not the first to think of the link with Trafalgar Square. A correspondent's suggestion was published in *THE BUILDER* in 1857: 'planned,' he says, 'to relieve with facility the over degree of traffic clogging the streets, to clear the South Bank area, at present a hotbed of moral and physical disease.'

Weapon No. 2, the dome, was also double-edged. Was it practicable? The first experts consulted said it was not. Was there room for it? It seemed doubtful, because in a fit of exhibitionism we had decided it must be 365 ft. across and we clung to that dimension with pathetic



assurance. Weapons Nos. 3 and 4, however, looked like being of some assistance, and nervously the first lines went down on paper.

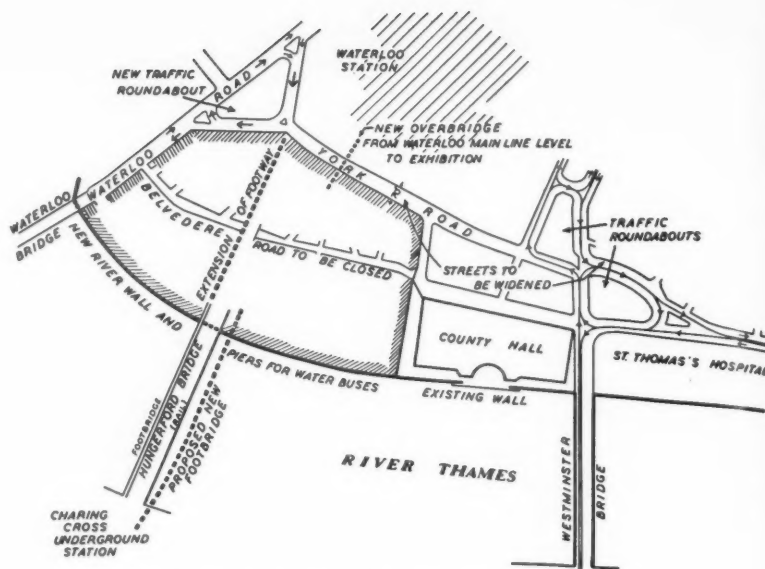
If the dome was in fact to be of this size there was only room for it in one place. Navigational demands determined the placing of the new Thames footbridge. The position of the existing Waterloo tube station sited the new subway and escalator link without question. As for the main entrances, apart from river piers, only two frontages, the police advised us, were available, so choice was limited and decision comparatively simple.

January was spent in consulting with the myriad authorities concerned upon the layout and in getting the approval and comments of the various authorities within the Festival office, including the Architecture Council, and by February (a month otherwise only notable for the centenary celebrations of the Inland Revenue Department) we were ready for the next and vital step, the dividing of the site into separate zones and, after that, the choice of architects who were to be recommended to the Festival office for appointment.

Before doing this a design policy had to be agreed. Broadly speaking, there were three courses before us: (i) to make use of previously designed prefabricated buildings available from stock, and re-adapting them where necessary to our use; (ii) to lay down one or more modular systems of construction, which all architects would be instructed to follow; (iii) to brief the architects as carefully as possible with our needs and budget, and to leave them alone to develop their designs within the minimum of limitations. Rightly or wrongly, we adopted the last course, fully realizing the risk that coherence and homogeneity would be the more difficult to obtain but confident that the chances of visual excitement would be more probable. This after all was to be a British exhibition, and the British are notoriously anarchist. As long ago as 1667, remember, a French observer remarked that 'the English nation is of very irregular and fantastical temper', and no one who studies our plan could deny that these adjectives are equally applicable today.

We also took three more decisions at this stage. The first was that at least two or more zones should be subject to competition; second, that no architect should, if possible, be given more than one assignment in 1951 upon any Festival project; and, third, that an attempt should be made to commission at least some designers whose reputations had yet to be made.

Not all these aims were achieved. Competitions were an early casualty of the stringent time programme, and only two survived. Some of the younger, lesser known, but most promising architects whose names were considered could not in the end be recommended because we feared they would be unable to maintain the hair-raising timetable. There were other considerations too. This was a team job,



Plan showing improvements to traffic facilities round the South Bank site

and the site was constricted. Time was short; tempers must not be. We wanted men of genius, but could not afford men of temperament. It was something like casting a West End comedy in which all the players were stars and everybody must be allowed a fair share of the best lines. By 1 February, however, the list was ready for approval by the Architecture Council and other Councils concerned, and by 1 March the architects had been given their briefs, their building lines, their budgets and our blessing.

The Design Group could now turn its attention upon other tasks. The Treasury required more detailed estimates. Those for building and display work were comparatively easy to prepare, but what of the oddments? For example, drinking fountains, ice-cream kiosks, tree-planting, river piers, fireworks, litter-bins and café tables had to be considered. How many were wanted? What would they cost? The list seemed endless and unpriceable, but the Treasury, rightly enough, was inexorable—I have often wondered why its hand is usually called dead—and a budget there had to be. There were other problems too. Negotiations with the War Office over the proposal to build a Bailey Bridge, with the Admiralty over the loan of pontoons, with the P.L.A. over site illumination, with the local authority over drainage, and, of course, almost daily discussions with our landlords, the London County Council, and other negotiations with those few departments which, as Thomas Spratt put it, were, alas, 'invincibly armed against the enchantments of enthusiasm.'

By 1 April some progress had been achieved. The architects had been formally commissioned, and suggested contractual procedures were under discussion and, best of all, our consultant engineers, Messrs.

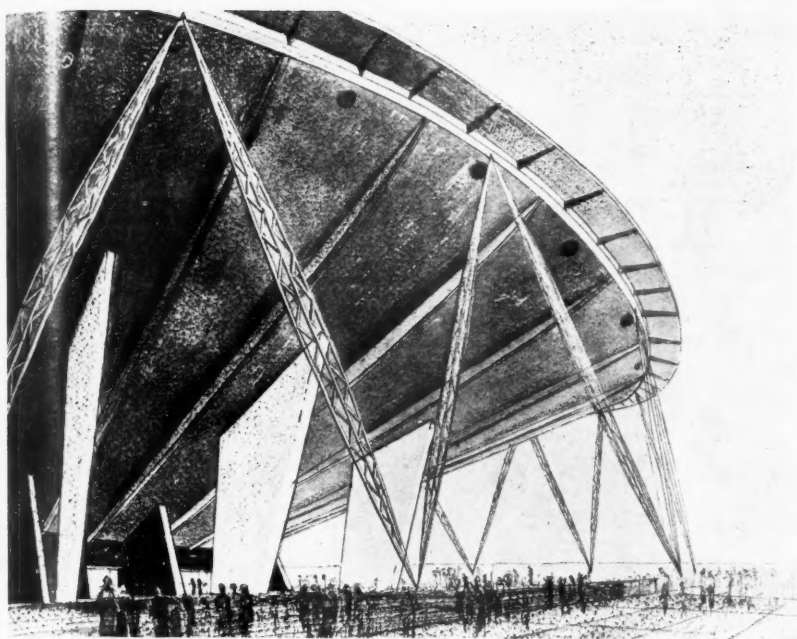
Freeman, Fox and Partners, were already at work. To this firm, direct descendants of those who carried almost equal responsibilities in 1851, we entrusted the triple task of preparing detailed building estimates, consultancy for all structural design, and the organization of contracts and site work. To the Design Group, as you can imagine, this appointment was most welcome. Not only could we empty a toppling pile of in-trays into somebody else's lap, but we had found in Sir Ralph and his associates, engineers who were never alarmed by the unorthodox, nor overwhelmed by the magnitude and complexity of the task before them.

March was a good month, and we were undismayed by a letter received from a Midland firm asking if room could be found on the South Bank for a discreet display of shrouds.

April was spent in continuing negotiations with the various authorities, including the Raw Materials Committee and the Royal Fine Art Commission (both very helpful), and in almost daily discussions with the commissioned architects. By 1 May the architects' first sketch plans were in. There were no disappointments, though in a number of cases enthusiasm had outrun practicability, the budget, or even the building line.

Some weeks passed, while the drawings were studied in detail by the Festival Office and its advisers. Estimates had to be re-prepared, structural systems examined, alterations suggested, and drastic cuts occasionally imposed. The architects bore up well under this process. They had been well schooled in democracy which, as our Director-General recently reminded us, is a system under which you say what you like, when you like and where you like; but you do as you're damn well told!





The Dome of Discovery. Architect: Ralph Tubbs [4]

Meanwhile, although as progress photographs show, the concert hall and river wall were moving well, already the chill winds of delay were perceptible about our festival ears. We had opened negotiations with contractors, who not unnaturally had raised eyebrows at the curious design of some of the buildings set before them and at the fantastic shortness of the time available in which to construct them.

As the estimates came in and were totted up, it became clear we would be overspending our budget; and in June, to make things worse, the Festival's budget was cut by a million and a half pounds, a cut which was unkind, but hardly more merciless than the remark from a speaker at the National Assembly of Local Authorities who said that in his opinion those working on the Festival project were all far too old! Still, as Mr. Swangle said to Mr. Pickwick, 'A gentleman expects reverses', and we struggled on. By July the architects' estimates were all in, and in some cases, with the help of the Chairman of the Architecture Council, the designs had to be drastically amended. There was, however, one encouraging event this month, the letting of the contract for the upstream section to Messrs. Richard Costain Ltd. On 26 July 1949, a great day for all of us, and exactly to the day a century since the 1851 Exhibition was put in motion, work on the site was started.

August, however, opened dispiritedly with a strike of dockers in London, and the EVENING STANDARD launched an assault upon what it called 'Mr. Morrison's multi-million pound baby'. Meanwhile, the master plan was being revised and service runs replanned, and the agenda of the Design Group was as crowded as ever.

Here are a few items from this month's minutes: helicopters, site passes, experimental canvas, women's uniforms, coloured asphalt, contractors' hoardings, visual symbolism, balloons, baby slings, typography, pyrotechnics. The display designers, who had been appointed some weeks before, were now working with the architects and theme conveners, and the hottest arguments were in full swing. The smallest decision on Exhibition content seemed to affect everything else. One more cow, for instance, in the Agriculture pavilion meant not only reassessment of the cost of feeding, carting manure, veterinary fees and insurance, but even the position of gully traps and manholes.

By September, however, the working drawings were trickling in, nothing like fast enough of course, Messrs. Cubitts had been appointed contractors for the downstream section, later to be joined by Messrs. Kirk and Kirk, and main service runs had been agreed with the L.C.C., who were to carry out the work on our behalf.

In October the Festival received its second financial cut. Again the effect upon our work was serious, for in some cases plans had to be entirely recast, though to some members of the public the cut seemed modest enough and in fact was described by one commentator as 'saving the cost of one bun to a white elephant.' In November the South Bank plans were published in the Press, where, generally speaking, they met with a kindly, if puzzled, reception. We received a broadside from Mr. Tom Braddock and, in December, an inaccurately aimed volley of what I must call gripe-shot from Professor Richardson, a critic who has never let accuracy stand in

the way of enthusiasm. The year 1949 closed with a strike. Contractors were soon at work again, however, and in January a good time—or should I say a good time and a half—was had by all.

Such is the story of the first eighteen months' work on the South Bank Exhibition, only one, I must again remind you, of the projects upon which the Panel is engaged. It has been an adventurous journey, not unlike, I sometimes think, the famous voyage undertaken under the command of the Quangle-Wangle and which was pursued, you remember, with the utmost delight and apathy. So many of the events and encounters in Lear's famous saga are so familiar. Those characters, do you remember, who were perpetually and unsuccessfully disentangling vast heaps of knotted worsted; the multitudes of white mice, with their oceans of pudding who, when asked for a share, handed over half a walnut shell of diluted custard. The blue-bottles, who lived in perfect and abject happiness, discoursing in a genteel manner with a slightly buzzing accent. We could all, I think, put a name to them. And then there was the odious little boy who upset the boat and nearly sank the crew with a sudden well-aimed blow, and the Co-operative Cauliflower, so helpful to start with, who suddenly and unpredictably stalked angrily off into the sunset—so exactly like, well, never mind who! Finally, when the voyage was done, do you remember that the travellers, tired and not a little proud, were received upon their return with joy tempered with contempt.

Before taking you round the site building by building, I should like to discuss very briefly a few of the problems which have so far only been touched upon. First of all there is crowd control.

This is no new problem for exhibition planners. There is no doubt, however, that despite the fact that the report of the Royal Commission on Population would seem to indicate that there is a growing shortage of general public, we will be faced in 1951 with a major task. At the same time, we should, I think, keep a sense of proportion in the matter. Attendances of from 50,000-75,000 a day or even higher are not unknown at Earls Court, Olympia, and even at the Zoo (which has, incidentally, an area only 3 acres larger than our site), and no great difficulty has been found to date in handling crowds of this size, at least, for very short periods. On the other hand, the central position of the South Bank and the long run of the show undoubtedly complicate the problem very considerably, particularly at week-ends and peak traffic periods.

So far as the Exhibition site itself is concerned, the number of people who can be safely contained within it is reasonably controllable. With the help of experts we are working out the capacity of each building and assessing upon the best evidence available what is the maximum number of people who can be let in at any one time, and who can still see the Exhibition in reasonable comfort. We are

installing a mechanism, similar to that used in football stadiums, which simultaneously records the entry and exit of any person from the site, so that the manager is continuously aware of the position and can give orders to close the gates when, in his opinion, the capacity attendance has been reached. This, of course, transfers the problem to the perimeter and approaches and thus, strictly speaking, beyond the control and responsibility of the Festival office. But here again we are working with the experts on possible solutions.

So far as wheeled traffic is concerned, on page 210 is a plan of the improvements which have been worked out with the help of the Ministry of Transport, and which are designed to improve the flow of traffic in this area. A further contribution will be made by the new layout of Parliament Square.

So far as pedestrians are concerned, we are discussing with the police, London Transport and other authorities, methods for ensuring that, when the Exhibition is full, the public is diverted to other centres of attraction. This is not as easy as it sounds for it involves, of course, re-routing of river boats, special notices at all Tube stations, and similar devices. We are, of course, well aware of the seriousness of the whole problem, which is aggravated by the fact that no estimate of attendance can at present be more than guesswork; but we are confident that the measures we are taking with the help of our technical advisers are the best that can be devised.

**Safety Precautions.** Related to the problem of crowd control is, of course, that of safety precautions generally within the Exhibition. The Festival Office is responsible for seeing that all its projects are planned, erected, maintained and managed in such a way that the safety of the public is ensured. Under the Festival of Britain Act we are technically exempt from L.C.C. bye-laws and regulations under the London Building Acts, or such of them as apply, but the Government has rightly insisted that the standards of safety throughout the Exhibition should in no case be inferior to those which are legally applicable to normal buildings. In some cases in fact they will be more stringent.

The number of exits provided, width of gangways, etc., is carefully studied on all drawings by our Safety Precautions Officer, and questions of dispute are referred to a tribunal under the chairmanship of Mr. Howard Lobb. We have been fortunate, too, in obtaining the constant advice of the expert technical officers of the L.C.C.; and the whole layout has been planned to ensure adequate open circulation between structures and to provide for rapid dispersal from individual buildings and easy approach for fire appliances. A comprehensive alarm system will be installed, under the guidance of police and fire brigade authorities, and ample patrol staff will be on duty, in addition to the fire and police stations on the site.

**Services.** The Exhibition site already contains a network of services, most of which



'London in 1851'. From a drawing by George Cruikshank

were due for extension and elaboration under the long term plans for redevelopment of this area. All planning of roads, gas, water and electricity services, therefore, has been carefully co-ordinated with the L.C.C., so that as much work as possible will have long-term value after the Exhibition has been dismantled. Electrical services are of particular complexity on this site, including such special demands as special illuminations, public address systems and B.B.C. sound and television services, and to assist in the layout of these and in the siting of sub-stations we have been working with our consultants, Messrs. McLellan and Partners. Mr. Wilson and his colleagues at the Ministry of Works have also rendered valuable assistance in the design and costing of all decorative water fountains and pumping machinery.

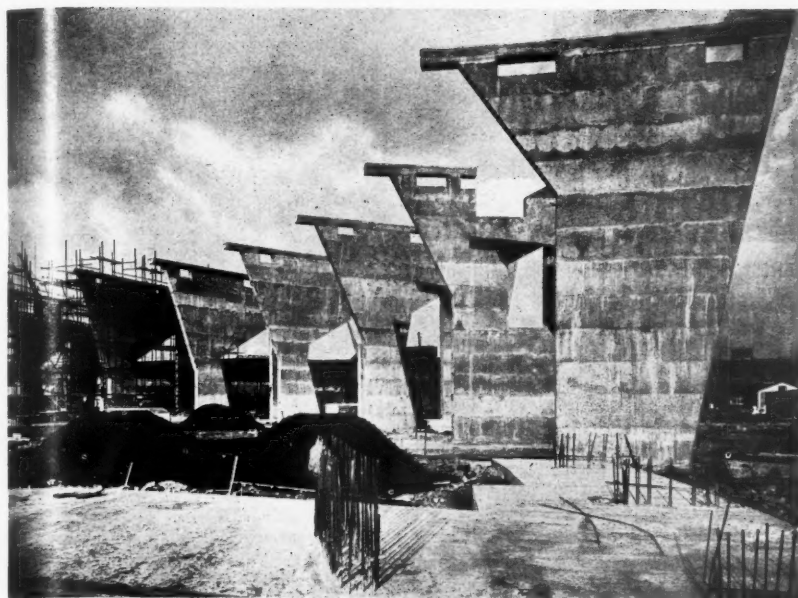
**Restaurants.** Some fourteen restaurants and cafés, ranging from main meal service types to cafeterias and snack bars, will be included in the Exhibition grounds, many of them sited along the river front and taking full advantage of views of London and the Thames. There will also be a mobile tea service, and numerous kiosks, and one of the two large restaurants in the L.C.C. concert hall will be open to Exhibition visitors. Here is something we hope to do better than 1851. For the Crystal Palace, remember, was dry, and the fact that 1,000 gallons of pickles were eaten by its visitors is not the best evidence of good catering.

**Lavatories.** It has been difficult to find proper statistics on this matter, but all authorities seem to agree that there are never enough lavatories and that the proportion of Women's to Men's is, because of children, nearly always under-estimated. Since lavatories are amongst the most ex-

pensive of structures to build, it has been tempting at times to economise upon these rather than upon Exhibition and display. Our advisers, however, have been adamant, and we hope supply will equal demand.

**Equipment.** Everything provided for public use in the Exhibition will be regarded as being on show, and will be chosen as representative of the best that is being made. The selection of these items, as of the exhibits, will be made with the assistance of the Council of Industrial Design, which is responsible for seeing that the best products of British industry are properly represented.

**Related Arts.** Finally, and almost most important of all, the fine arts and landscaping. The impermanence of exhibition buildings encourages an uninhibited even playful approach to design which has a lasting value, not only because it loosens up minds constrained by more normal problems, but also because it introduces to each other—often for the first time—our fellow artists. It is particularly in exhibitions that we can achieve that close harmony of sculpture and building, of landscape and mural painting, of colour play and typography—that harmony which we all strive for in our more permanent work, and have such difficulty in persuading our clients to pay for. The Festival Office is sharply aware of its responsibilities in this field. As you know, three sculptors, Henry Moore, Jacob Epstein and Barbara Hepworth, have already been commissioned by the Arts Council to carry out work which will be shown on the South Bank, and they are only the first members of a team to be drawn from the lists of suitable artists and sculptors which we have been compiling—after personal inspection or knowledge of their work—during the past months. We



The Dome of Discovery under construction, 2 December 1949

are confident that the talent available to use will ensure a very high standard of painting and sculpture throughout the Exhibition.

So far as landscape is concerned—a particularly important field of design upon so barren a site—we have to help us Mr. Frank Clark, almost whose first duty has been to organize the transplanting to the South Bank of a number of large mature trees, no simple operation when you think of the elbow room available on this site and the physical obstacles to be surmounted in reaching it.

And now, at long last, I should like to take you quickly round the site. I shall say nothing of the contents of each pavilion—we must leave some surprises in store for 1951—and shall touch only upon such items as seem to be of particular interest to a technical audience.

Let us take the main entrances first. At Chicheley Street, the main entrance for all wheeled traffic, the layout is conditioned by the necessity to keep the existing through road to County Hall unobstructed. On the left are administrative offices planned in two floors on a curve and overlooking a small garden at the rear. The first floor consists of a series of linked 'boxes' freely suspended from a welded steel framework. On the right are the turnstiles beneath a reinforced concrete canopy with a patterned soffit. After passing beneath this the visitor enters the first courtyard. On his right is the Information Centre, backed by a 60 ft. high decorative canvas and tube screen; on the left, an informal garden separating the courtyard from the Agriculture Pavilion behind which the Dome and the main river view remain for the time being hidden.

Travellers by underground or from Waterloo main line station arrive by

escalator or over bridge in this two-level structure designed by Gordon Tait. Also accommodated here are more offices, the site police and fire stations, and a large restaurant looking down the courtyard. Five 63 ft. high parabolic-shaped timber arches of laminated construction span the building and carry a suspended roof.

**The Bailey Bridge.** The bridge forms a direct pedestrian access to the centre of the Exhibition, and will carry, if necessary, some 9,000 visitors per hour. It will be approached on the North Bank from a platform over the bottom of Northumberland Avenue, reached by stairs from the Embankment Gardens, with a further staircase adjacent to Charing Cross Underground station. On this platform there will be pay boxes, turnstiles and administration offices.

The bridge itself will be decorated on the upstream side with six masts, 100 ft. high, each carrying two spirals of wind motivated spinners, and groups of flags between the masts, the monotonous length of the bridge being broken by zigzag canopies slung at intervals from the overhead transoms. The bridge will be built by the Royal Engineers and carried on piling designed and built by the L.C.C. The architects are Alec Gibson and Misha Black.

**Waterloo Bridge Road.** This entrance, designed by Jane Drew and Maxwell Fry, is marked from inside and without by a 90 ft. high tower carrying a viewing platform reached by lift, the open tube lattice structure forming the basic pattern of decoration. A careful treatment of stairs, levels and ramps, all built in concrete, emphasizes the drama of this high level approach, and direct access to the Concert Hall without entering the exhibition grounds proper is

provided by a high level post-tensioned concrete bridge, constructed on the Freyssinet system. Direct wheeled access is provided along Belvedere Road.

**River Piers.** Two of these, each 100 ft. long, are being built by the L.C.C., making use of loaned equipment where possible from the War Office and Admiralty. Turnstiles, special decoration and lighting are added by the architects in whose zone they occur.

From all these entrances the visitor is likely to make his way to the heart of the Exhibition, which is the Main Fairway (Cadbury-Brown and Frank Clark). This is planned on two levels, the lower concourse terminated at the river end by an elaborate water display, the upper level carrying the two cone-shaped entrance features, which are the porticoes to the two main narratives.

Let me now follow the story through.

From Origins of the Land, a romantic, shaggy composition of earth and rocks, dark and oppressive in feeling, we enter the Countryside and Agriculture Pavilion (Architect, Brian O'Rourke), consisting basically of a 60 ft. span, open-sided Dutch Barn, the ground floor of which carries displays of machinery and stock pens. The materials—asbestos, canvas, stone, brick—are deliberately varied (as they are on all farms today) to show how, with careful designing, old and new materials can be satisfactorily harmonized.

From here we enter the Raw Materials Pavilion (Architects Cooperative, Ove Arup, consultant), a concrete tetrahedron, dramatic in form and external texture, standing upon a grass podium, and lit only from the top. A connecting bridge across Belvedere Road leads directly into the Pavilion of Industry (Baines and Reifenburg, F. J. Samuels consultant). This is a large galleried hall planned to display the largest exhibits, and terminated at each end by smaller halls. Cladding is in asbestos, brick and precast concrete slabs, on a steel frame, and will exhibit several new forms of fixing. The landscape consultant throughout this area is Mr. Peter Youngman.

By now you may need some refreshment, and here, if you can afford it, is the Riverside Restaurant designed by Leonard Manasseh. The drawings are still in their early stages, and I will not therefore attempt to describe this lively little building, except to say that it is being planned as a luxury restaurant and is sited to facilitate separate access for late extension nights. The story itself continues with Sea and Ships, an openly planned lattice frame structure, designed by Basil Spence and Partners, into which the display is integrated at various levels. Steel, pre-stressed concrete decking, canvas and aluminium cladding are used, and among the features of particular interest are a 50 ft. high hydraulic fountain designed by Richard Huws, a large mural (by John Hutton), and a relief sculpture (by Siegfried Charoux), the scale of which is partly determined by viewing from the north embankment.

Passing beneath the Powell and Moya Vertical Feature, a 200 ft. high pencil



dramatically suspended 40 ft. above our heads, we reach the Bridgehead restaurant (Misha Black and Alexander Gibson), planned on two floors round a courtyard to take maximum advantage of the river view. The constructional system used will be a simple steel frame with precast concrete unit floors.

Linked to this is Transport (Arcon and Samuely), the general two-level form of which has been dictated by the complicated display demands. The steel and concrete structure is supported above an open ground floor and is fully glazed on the Fairway side.

Facing it across the Fairway is the Dome, designed by Ralph Tubbs to house the story of British predominance in discovery and exploration, not only by land and sea, but also into the very nature of the living world and the universe. Here are a few points of interest in this remarkable building.

The arrangement of ribs is, we believe, unique. The ribs are arranged as 'great circles' in three directions, thereby forming an entirely triangulated Dome within an overall pattern. It is, therefore, neither geodetic nor radial—the two forms most usually used.

The arrangement of light steel spars that hold the Dome by forming themselves a series of triangles hinged top and bottom, makes it possible for the aluminium Dome to expand and contract and, at the same time, means that it is always symmetrically held when the wind blows on it, i.e. the series of pins on the side parallel with the direction of the wind are triangulated against the wind. The diameter of the pin which takes the total load on each of these spars is only  $2\frac{5}{16}$  in. Preliminary tests of the structure were, incidentally, carried out with a model in a wind tunnel.

From the æsthetic point of view, the whole design is based upon a geometrical conception: Part spheres, circles and conic sections. The major part of the design is the cutting of the great cone at an angle giving a plan of two eccentric circles.

The Dome is entirely artificially lit in mysterious and monumental contrast to the rather light-hearted character of the rest of the Exhibition.

No one enters the Dome by merely penetrating an outer wall. The approach via the main entrance is through a sunken low-ceilinged vestibule from which steps rise up well within the Dome. The subsidiary entrances are by long covered approaches which similarly finish well within the Dome.

The great 35 ft. gallery is supported on massive concrete fins, which are in complete contrast to the lightness and elegance of the steel and aluminium structure itself.

Those of us with the strength can now begin Chapter II of the story.

Entering again through the second cone-shaped portico the opening sequence is arranged partly in the railway arches and partly in an openly-planned two level structure, designed by Cadbury-Brown, linked with a café. Emerging on the downstream side of Hungerford Bridge, the vaults of which largely consist of a service

spine of lavatories, offices and stores, we enter a courtyard, the scale of which, intimate, simple, almost cosy, is set deliberately to contrast with the more dramatic and metropolitan atmosphere of the upstream section.

On the left is Character and Tradition (Goodden and Russell), a simple rectangular steel framed structure with a Lamella type roof, arranged with a gallery to connect at high level with the L.C.C. Concert Hall, and planned to overlook an informal garden in which is placed a small tented restaurant surrounded by water.

On the right is the Television Pavilion (Wells Coates), partly carried on reinforced concrete 'pilotis'. Austere, almost classical in form, it is conceived as a mystery cave, and is artificially lit. Visually linked with this is the Telecinema which, with the Dome, is one of the most technically interesting buildings in the site. Its 'lobster-claw' section, expressed externally, is determined by the differing projector 'throws' for film and television, and difficult acoustic problems, inside and out, have also had to be solved. The basic structure is reinforced concrete, the complicated equipment being housed in steel-sheet box units manufactured off site and moved in complete.

On the third side of the courtyard stands a simple canvas-clad pavilion designed by Denis Clarke-Hall (L. W. Elliott, consultant), to house the introductory story to 'Homes and Gardens', where our main theme continues.

This pavilion (by Katz and Vaughan) is designed in three blocks, using Dutch Barn units and welded tubular scaffold trusses. External cladding is largely brick and stone (in character with the theme), and the building is surrounded back and front with gardens, for which Peter Shephard is consultant designer.

Behind, and adjoining Waterloo Bridge Road, is the three-storeyed building, designed by Edward Mills to house the staff canteens, cloakrooms, workshops and stores. This is partly carried upon existing brick vaults and is planned on balcony access principles. An open decorative screen by the same architect completes the perimeter boundary.

Across Belvedere Road and beneath the entrance structure designed by Jane Drew and Maxwell Fry are displays on Schools and on Health, housed for the most part in existing vaults. Two restaurants, both single storey and of light frame construction, are provided, one overlooking the existing dock which is being converted for the display of small craft, the other to take advantage of the splendid view down river to St. Paul's. A new material being used here for roofing is a sandwich of impressed cork between two sheets of aluminium.

The central feature in this section is, of course, the Shot Tower, on the summit of which will be mounted the aerial of a radio telescope, and in the base of which is housed a small 1851 centenary exhibit. The tower is surrounded by planting which forms a background to the Sports and

Open Air arena, where demonstrations will be given.

On the promenade an open layout of display booths (Gordon Bowyer and Ursula Meyer) links the curved restaurant with the Seaside Section (Eric Brown and Peter Chamberlin), which occupies the terrace in front of the Concert Hall, and is treated as an open promenade. Tubular masts carry a suspended velarium over some of the displays, and this is counter-balanced by viewing platforms cantilevered over the river. A Pier Bar is placed overlooking the landing stage, detailed to give the structural character of a seaside pier.

By passing back beneath Hungerford Bridge, the decorative treatment of which is in the hands of the Festival Office Unit, we regain the Fairway and the circuit is complete.

Such in brief is the journey, and I am sorry that I have no time to expand it by describing some of the associated designs—the treatment of County Hall promenade, the moored exhibits in the Thames, and the decorated street approaches.

I hope that I have, however, said enough to confirm my own belief that the South Bank Exhibition will be an exciting architectural experience, and though I can not promise a journey round it will be less fatiguing to you than this one has been, it will, I am confident, be a great deal more entertaining.

## DISCUSSION

**Professor Sir Patrick Abercrombie, M.A., F.S.A. [F]:** An exhibition is the opportunity for an architect to shake a loose leg. Those of us who are old enough to remember, felt that the designer of Wembley was extremely solemn, but no one could accuse our lecturer tonight of being a solemn young man. If the architecture of the exhibition is as lively as his paper we shall be satisfied.

Here is an opportunity for modern architects to show what they can do. They are unfettered by the need for permanence, and they can try all sorts of experiments, as Mr. Casson has hinted. We shall welcome the sight of those experiments, although perhaps some of them we may be glad ultimately to see out of the way! I think that we have a chance of seeing how modern architecture coheres or hangs together.

We are about to see the same sort of effects which are so attractive in a medieval city, where a number of different designers were at work more or less at the same time producing a great deal of different work, yet with a certain homogeneous or common approach. That is what I hope we shall see in this exhibition.

It is not a problem—discussed in this room many times—of the control of architects called in to design buildings without any selection. They are selected architects. I am glad they are youthful, and I am glad that there are some almost untried among them. We want to see what they can do, and this is a great opportunity.



There is something satisfying to an old-fashioned architect like myself to see a return to the search for pure form among modern architects. We saw it recently in the design for the UNO headquarters. Again, the other day Mr. Gibberd told us that he wanted a dome in his new town, so he designed one. He has not made up his mind as yet to what use it will be put! I think that it is a delightful return to the study of first architectural principles, and that is what we see in the use of the dome at the exhibition.

I should like to ask Mr. Casson whether he is taking similar precautions to those which had to be taken in the case of the Crystal Palace, where they were plagued by innumerable sparrows. There was a danger on one occasion of their not even regarding the presence of Royalty, who had come to inspect the palace! I am sure we are all familiar with the Duke of Wellington's advice: 'Get some sparrow hawks'. There are problems which will arise despite all the cares which are taken in buildings as they go up.

Another question which I should like to ask Mr. Casson is what is his feeling with regard to the proximity of the County Hall to these modern buildings? Has he seriously considered doing what the French did to the Trocadero, that is, pulling it down?

We have the Clerk of the London County Council with us here this evening, whom we are delighted to see and to congratulate upon the honour which has been conferred upon him this afternoon by the President of the French Republic. It gave me the greatest pleasure, having done occasional work for the London County Council (sometimes with remuneration and sometimes without) to hear how helpful they have been to the Architectural Committee and Group in carrying out this work. It is, of course, very largely under their wing. The embankment is being constructed by their engineers, and the concert hall by their architect, Mr. Matthew; so there is close inter-connection. It is a good example of team work. There are the engineer, the official architect and the free-lance architects all combining to provide a lively, exciting exhibition. I ask you to pass a very hearty vote of thanks to Mr. Casson for his extremely serious paper.

**Mr. J. Murray Easton [F]:** I remember an abortive attempt to extract from the late Sir Edwin Lutyens his opinion of the work of a contemporary architect. All we got was 'He writes very nicely! That goes for Mr. Hugh Casson too, and it is not meant as a back-hander. His paper has, I know, given all of us a great deal of pleasure because of its order, precision and humour.

The first two qualities testify to an architectural mind, and the last must be indispensable in his really terrifying job of co-ordinating the innumerable bits and pieces that go to make up an exhibition. Urgencies, frustrations, and narrowly averted catastrophes are the furies which preside over every exhibition in the making, and all Mr. Casson's natural buoyancy will

be needed, most of all in the last nightmare weeks—or is it months—before the opening.

Nor will there be lacking ancestral voices prophesying woe. I understand that these have already been heard. Mine is not to be confused with those. The promise of blood and tears for Mr. Casson and his colleagues is intended merely to provide a dark background against which their achievement will stand out all the brighter. Towards that ultimate triumph I think we ought to turn the eye of faith, even if we do not wholly understand what the other fellow had in mind or why he has done it that way.

We have seen enough to know that a tremendous effort has been made; that the exuberant imagination of some of our brightest young designers has been given full scope, and I think we shall have no cause to blush when we show our architect friends from abroad round the Festival. Certainly the approach to the whole problem of organizing the exhibition has been quite different from and infinitely superior to anything we have had before in this country.

Mr. Casson awards an 'Oscar', whatever that may be, to Stockholm 1930 and Paris 1937. I should like also to hand one to Gothenburg 1923 and to Zurich 1939—especially to the latter—and to shed a sentimental tear over the White City in its virgin state. Those heavenly mansions which Mr. Imrie Kiralfy prepared for the Franco-British Exhibition of 1909 had an enchantment of their own. But for sheer exuberance give me Paris 1925, the Arts Decoratif. I suspect that to those of Mr. Casson's generation the thing smells rather, but wait another fifteen years, and what a subject for his pen and pencil! The Lalique Glass, the ironwork of Edgar Brandt, the furniture of Sue et Mare, the stately interiors of Ruhlman spread in waves of decreasing vigour all over the world, and I think that it took the war to kill them.

As a corrective to all this riot of modernity there was the handsome and thoroughly traditional figure of a grandson of the Henry Cole of 1851 fame. He (afterwards Sir Henry Cole) was the Director of Exhibitions to His Majesty's Government. He was a sympathetic if sometimes puzzled friend to two young London architects who had got involved in the mêlée, and was adored by the French for being so supremely and impeccably English. Will our 1951 Festival of Britain seem just as strange twenty-five years hence as that Arts Decoratif show does today? I shall, alas, never know; so I had better get down to the job for which I am here.

Mr. Casson has given us a most interesting and entertaining paper. I wish him and his colleagues every success, and I have the greatest pleasure in seconding the vote of thanks moved by Professor Sir Patrick Abercrombie.

**Mr. R. A. F. Riding [A]:** We have heard a wonderful story this evening of the preparations, negotiations, the technical achievements, the teams of experts, and

all the ramifications of human activity, intelligence and intellect which go to make this vast project. I can not help noticing that the one thing which has never been mentioned in this hall this evening is aesthetics. There is immense scope in an exhibition of this kind for the erection and the design of beautiful buildings; but I feel strongly that these people are simply trying to excel in clever structures, clever forms and clever technical achievement instead of what an architect should keep first and foremost in mind—beauty.

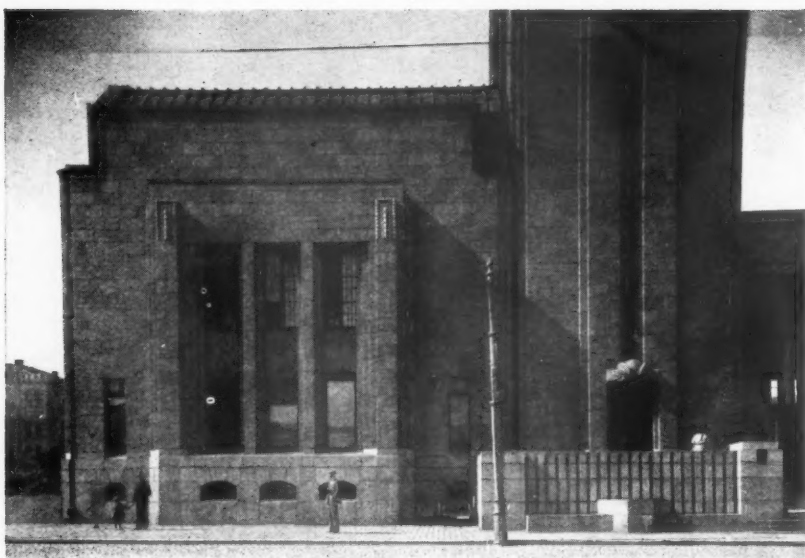
**Mr. Hugh Casson:** I should like to thank Sir Patrick Abercrombie and Mr. Murray Easton very much indeed for having said such nice things. I do not think that we shall have sparrows in the Dome, because I do not think that they will find their way in! The whole purpose of the Dome is to make it rather difficult to find your way in so that once you have worked your way through the low ceiling porches—as through the porches of St. Peter's—you are suddenly struck by the enormous span.

As to the County Hall, I do not know what Sir Patrick Abercrombie's opinion is, but I am rather fond of it as a building, and have always rather admired it. I do, however, feel—and a few of my colleagues in the Design Group share my feeling—that it is a very dominating structure to have so close, and anything we do on the exhibition site is literally overshadowed by County Hall. We have always been very conscious of it looking over our shoulders as we worked. We are a bit more fortunate with our buildings on the North side, and we are continually blessing our luck that we are not facing one or two other buildings which shall remain nameless!

I do agree with what Mr. Murray Easton said about Gothenburg and Zurich. In fact, when this paper was written originally they were both included, together with the Arts Decoratif, but the paper had to be shortened so my references to them were dropped. I would add to the glories of the Arts Decoratif, L'Escalier d'Honneur.

As to my responsibilities and the blood, toil and tears, I have a large number of colleagues with whom to share them, and I do not suppose we shall have more than a couple of drops each when we come to shed them.





A detail of Helsinki railway station showing the base of the tower. The whole scheme was completed in 1914

## The Royal Gold Medal 1950

A message from Eliel Saarinen, Royal Gold Medallist, with illustrations of some of his work

Regretting not to be able to be in London at the Royal Institute of British Architect's meeting to receive the Royal Gold Medal, so generously awarded to me, I wish herewith to express my heartiest gratitude to all the Members of the Institute.

In some sense I am inclined to regard the award of the Gold Medal as a token of a golden anniversary. Of course, this is a matter of sheer coincidence, for it so happened that in the winter of 1900—also, precisely half a century ago—I was in Paris occupied with the construction of the Finnish Pavilion for the Paris World's Fair.

In the closing years of the 19th century we, in Finland, were trying to solve our local problems in our own provincial ways. But in the dawning year of the 20th century—while I was tramping the boulevards of Paris—it became increasingly evident to me that the question was not just the solving of one's local problems, but that there was a growing and widely spread movement in the making, and that the year 1900, generally speaking, was to be regarded as the pivotal year toward a new orientation in the understanding of architectural language.

Really, there was a growing and widely spread awakening to the fundamental truth that the time needed an architectural expression of its own. In fact, in many places and in many countries there appeared an ever-increasing number of architects animated by an intense search for a new architectural form. Indeed, England was not late with her share in this respect. I still

have fresh in my memory such names as, for example, Baillie Scott, Harrison Townsend and Edgar Wood in England, and Charles Rennie Mackintosh in Scotland, to mention some.

This search for a new architectural form has been going on already during the long period of half a century. It still goes on in full swing, and it does it now on a very much broader front. This search—as you all know so well—has been many phased, just as life itself has been many phased. Sometimes the search has been cautious, sometimes bold, sometimes erroneous, sometimes tricky, sometimes too emotional or too technical. But on the whole the search has brought forth great gains in true form-expression, and in the right understanding of the meaning of architecture.

All this is called 'Modern Architecture', as you know. It is called 'Modern Architecture' in contrast to 'Traditional Architecture', which contrasting fact clearly indicates that the historical styles have still been much in use, continuously maintaining an illogical dual situation, thus harassing and confusing the obvious course of form evolution.

But I am sure—or, at least, I do hope—that the future art-historian of the year 2,000 is not going to use any more that nonsensical expression: 'Modern Architecture'. Instead, he is going to use the truly logical expression: 'Twentieth Century Architecture'. I wish to make a significant point of this, for insofar as I am inclined to



Saarinen's perspective of his famous design for the Chicago Tribune Tower competition, in association with Dwight G. Wallace and Bertell Grenman (1922). Placed second, it commanded world-wide admiration as a new contribution to skyscraper design

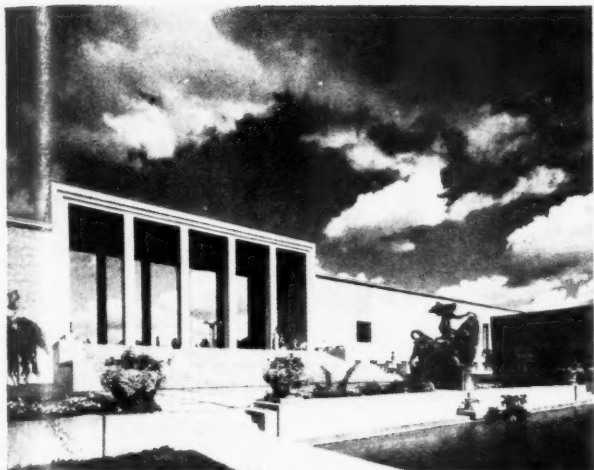
look upon things, the first half of the century has been the pioneering search for something to come, whereas the second half is going to be the bringing of the pioneering results into matured form-expression of the whole 20th century.

Now, the ultimate result of this matured form-expression is a very delicate thing, and one wonders what distinction it is going to gain in the annals of the history of architecture. Surely, it is going to reveal how much of honesty, of sincerity, and of true creative instinct, the architects are going to be able to bring into the field of their joint action.

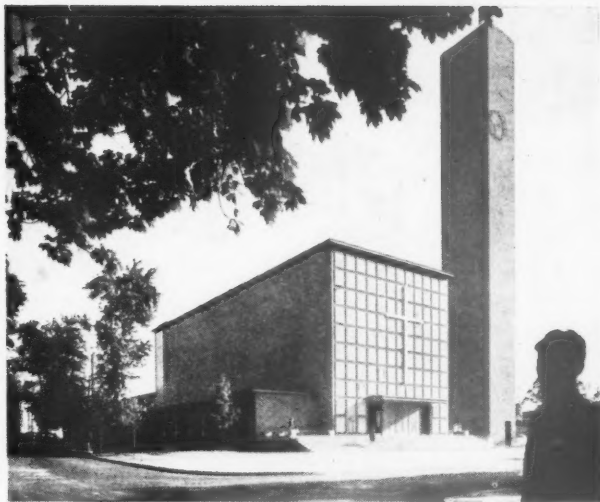
This is a 'joint' action, for sure, and so it must be, for—Gold Medal or no Gold Medal—everyone must try his best in this work, and although it might be true that in this work the individual might occasionally be able to have his voice heard, in the last analysis, it is the Century's voice that counts.

And now, once again, let me express my deepest gratitude for the honour the Institute has bestowed upon me.

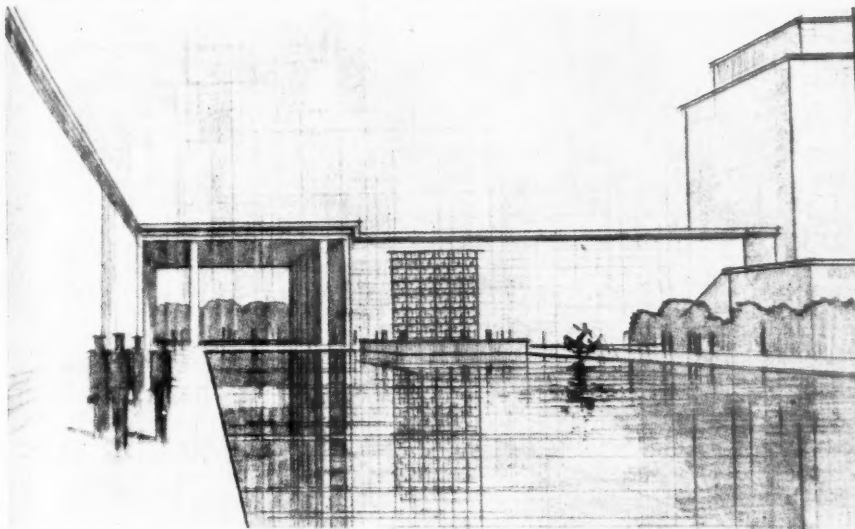
CRANBROOK ACADEMY OF ARTS, 8 March 1950.



The central arcade of the Museum and Library at the Cranbrook Academy of Art (1940). Sculpture by Carl Milles and Marshall Fredericks



The Columbus, Indiana, Tabernacle Church of Christ (1940). The nave is lit by tall narrow windows on the right; a similar single window on the left lights the chancel



Left: A sketch by Eliel Saarinen for the interior court of the Edmundson Memorial Museum, Des Moines, Iowa (1944)



The Music Shed at the Berkshire Music Centre, Tanglewood, Stockbridge, Massachusetts (1938)

Left: Studios at the Cranbrook Academy of Art (1931-32)



# Light Alloys as Structural Materials

By Geoffrey Wood, A.C.G.I., B.Sc., A.M.I.C.E.

Read at a meeting arranged by the R.I.B.A. Architectural Science Board, 14 March 1950. A. F. Hare [4] in the Chair

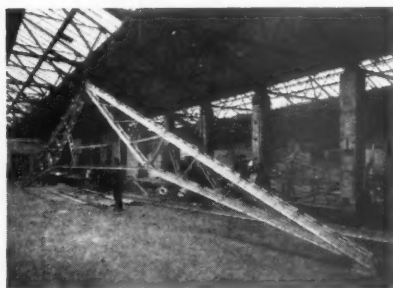


Fig. 2: A 65 ft. truss

**Introduction.** The group of light alloys which this paper covers are the aluminium alloys. Although aluminium is one of the most common of the elements in the earth's make-up, being far more common than iron, the difficulty of its extraction has, until recently, made its manufacture so expensive that its commercial use has been very limited. Since the introduction of large-scale electrical processes, however, which was probably stimulated by the demand for metal air-craft, the manufacture has expanded enormously and the metal can now be made at a price at which it can often be used economically as a structural

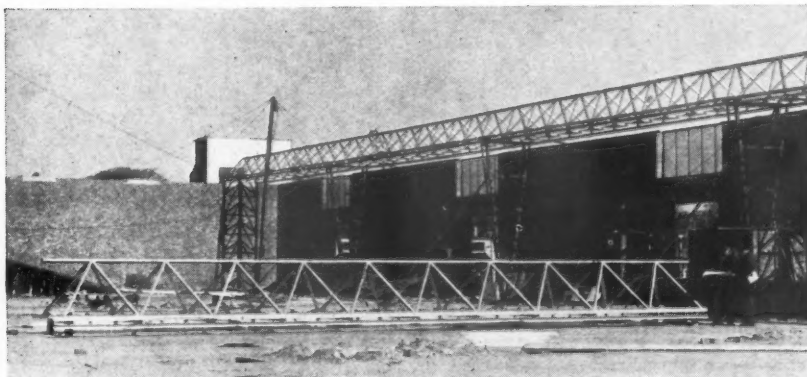


Fig. 3: A space frame construction, at Duxford

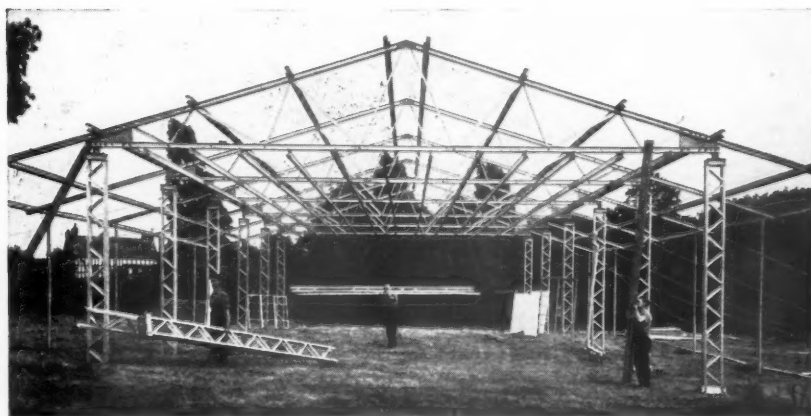


Fig. 4. Test erection of pin-up type shed

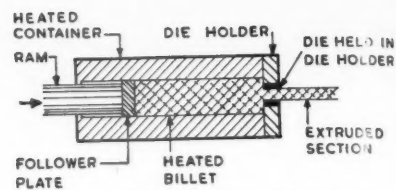


Fig. 1: Section through an extrusion press

material. There is quite an extensive field in which its two great assets of lightness combined with strength, and its very high resistance to corrosion, are sufficient to warrant its choice over all other materials. There are other light alloys, such as the magnesium alloys, but these are not at present of general interest for use in structures. The titanium alloys may become available in the not too distant future and may lead to a new light-weight material with exceedingly high strength.

The aluminium alloys were first made a practical proposition by the researches of Wilm in 1907. He first observed their age-hardening properties and found the correct proportion for the copper-aluminium alloys. The 'duralumins' have not appreciably altered in their basic composition since, and they are still the strongest of the alloys available.

**The Various Aluminium Alloys.** Pure aluminium is a soft ductile metal with a relatively low ultimate strength of about 5 tons/sq. in. Its strength can be increased by alloying with small percentages of certain metals. The properties can further be greatly changed by high temperature heat treatment followed by quenching (solution heat treatment), and still further by double heat treatment by following with a second low temperature heat treatment which increases the strength and elastic range at the expense of some ductility. Double heat-treated alloys are often referred to as fully heat-treated or precipitation heat-treated.

The two main series of aluminium alloys are the magnesium alloys and the copper alloys, and in both of these manganese performs an important secondary function.

The magnesium alloys are very highly resistant to corrosion and are suitable for marine work. Their strength, however, is rather low for structural sections except for the magnesium-silicon alloy known as H.E.10W.P. or (A.W.10B) which, while possessing the high corrosion resistance of the magnesium alloys, has a .1 per cent proof stress of 15 tons/sq. in., which is about the same as the yield point of ordinary mild steel. Special attention is drawn to this alloy because it is the 'happy mean' of all the alloys and is likely to be generally adopted in structural work in the same way as 'ordinary mild steel' has become the normal 'steel alloy' for structural steel work.

The copper alloys or duralumins are the best known as they were the first to be produced. Their corrosion resistance is lower than the magnesium alloys, but their strength can be much higher, reaching



**TABLE I**  
**Non-heat-treatable Materials**

Old BS/STA 7	New Gen. Eng. Series No.	Nominal compositions	0.1% proof stress (tons/in. <sup>2</sup> )*	Ultimate tensile stress (tons/in. <sup>2</sup> )*	Elongation (% on 2 in.)*	Brinell hardness (typical)
AW4A	EIC-M	Al 99% purity	—	4	20	22
AW5A	NE4-M	1.75-2.75% Mg	—	11	18	45
AW6A	NE5-M	3.0-4.0 % Mg	6	14	18	55
AW7A	NE6-M	4.5-5.5 % Mg	8	16	18	65
	NE7-M	6.5-7.5 % Mg	9	20	18	75

\* Specification minima.

**TABLE II**  
**Heat-treatable Materials**

Old BS STA7	New B.S./ Gen. Eng. Series No. or Equivalent Reference	Nominal compositions	0.1% proof stress  (tons/ in. <sup>2</sup> )*	Ultimate tensile stress  (tons/ in. <sup>2</sup> )*	Elonga- tion  % on 2 in.*	Brinell hardness (typical)	Tem- perature range for solution heat treatment  (°C.)	Conditions for precipitation heat treatment where applicable	
								Tem- perature range (°C.)	Period (hours)
AW9A	HE9-W	0.4-0.9% Mg	5	9	18	48	525-540	160	12-14
AW9B	HE9-WP	0.3-0.7% Si	10	12	12	75	525-540		
AW10A	HE10-W	0.4-1.5% Mg	7	12	18	65	525-540		
AW10B	HE10-WP	0.75-1.3% Si	15	18	10	95	525-540		
AW11A	HE11-W	1.0-2.0% Cu	10	17	15	90	520-530		
AW11B	HE11-WP	0.5-1.25% Mg	20	25	8	120	520-530		
AW14	HE14-T	3.5-5.0% Cu, 0.4-1.2% Mg, 0.7% Si, 0.4-1.2% Mn, etc.	15	25	15	120	485-505	155-185	5-20
AW15A	HE15-W	3.5-4.8% Cu,	15	25	15	115	505-515		
AW15B	HE15-WP	0.6% Mg, 1.5% Si 1.2% Mn, etc.	26	30	8	145	505-515		
AW17A	BS4L25	3.5-4.5% Cu, 1.2-1.7% Mg, 1.8-2.3% Ni	14	24	15	120	490-525	130-140	4-8
AW16A	DTD363A	4.0-8.5% Zn, 4.0% Mg, 3.0% Cu, 1.0% Mn, etc.	33	38	5	155	455-465		

\* Specification minima.

the very high proof stress of 26 tons per sq. in. and ultimate of 30 tons per sq. in. in the alloy H.E.15W.P. (A.W.15B). Even stronger alloys can be produced, but are suitable only for special purposes.

As a general rule it is best to use only H.E.10W.P. (A.W.10B), and to reserve all other alloys where consideration other than medium 'all round' properties are required.

The alloys have had various names during the last few years, and the latest change took place a few months ago. To help readers who have got used to the AW lettering the equivalent old and new terms are given side by side in the tables above.

A property of the alloys which has a great influence on design is the low Young's modulus of elasticity of  $10 \times 10^6$  lb./sq. in. compared with  $30 \times 10^6$  lb./sq. in. for steel. A section of aluminium used as a beam will deflect three times as much as an identical steel section, and to obtain the

same deflection, if deflection is important, it is necessary to increase the depth of the section to 1.8 times, or to make the structure continuous instead of simply supported. For example, the deflection of a simply supported beam is five times that of the same beam with fixed ends, and although true fixity is seldom achieved even partial fixity reduces the deflection considerably.

**The Extrusion Process.** A brief description of the extrusion process will help the appreciation of the possibilities and limitations inherent in the production of extruded sections.

A die is first prepared by cutting out the silhouette of the section in a thick tungsten-steel plate. For hollow extrusions two dies are required, one to the outside silhouette and a 'bridge' die to the silhouette of the hollow. The dies are fixed in an extrusion press and an ingot of aluminium alloy is raised to the correct temperature to bring

it to a semi-plastic state. The metal is then forced through the die by hydraulic pressure (which may be as much as 1,000 tons) and the extruded section slowly emerges through the die and travels along a bench, where it is cut off in convenient lengths. (Fig. 1.) In this condition the extrusions are often very twisted, and they are put into a tensioning machine, where a few seconds tension removes all distortion within reasonable limits.

It will be appreciated that the restrictions imposed by this process on the design of extruded sections are as follows:

1. The ease and speed at which the metal can be extruded will depend on the friction of the metal against the walls of the die. The greater the perimeter of a section in relation to its weight, the greater will be the friction and the higher the cost of production.

2. When the aluminium emerges from the die it must be strong enough to stand



Fig. 5: Example of pin-up type construction

up to the pressure required to push the length of section ahead of it along the bench. If the walls of the section are too thin they will collapse. This means that not only is there a limit to the thinness of a section, but the bigger the overall size of the section the thicker the walls will have to be. For this reason it may often be more economical of metal to use two or three small sections fixed together, instead of one large one. As a rough guide a thickness of  $1/40$  of the overall dimension is a limit to what is possible, but walls thicker than this are to be preferred.

3. If different parts of a section vary greatly in thickness there is a tendency for the metal to flow into the thicker portions. Sections should, therefore, be fairly uniform in thickness, though wide variations are possible.

4. The amounts by which any particular length of extrusion may vary (within ordinary commercial tolerances) are such that it is advisable to avoid using interlocking sections except where close fitting is confined to a few inches.

It will be obvious that the production of extrusions is a highly-skilled process, and the above notes are only an indication of what can easily be done. Complicated sections can be extruded, and it is therefore advisable to seek the co-operation of the manufacturers when any new sections are being designed.

**Fabrication.** The fabrication of aluminium alloys presents no difficulties and requires very little different plant from steel fabrication. Higher cutting speeds can be used and the lighter weight makes handling much easier. Some consideration is required when bending and forming alloys. The non heat-treated and single heat-treated alloys can be cold formed as for mild steel, but cold forming of the double heat-treated alloys is not advisable. Any bending should be carried out immediately after extrusion before age-hardening takes place, which means that the bending should be done at the extrusion works and not in the fabrication shops. This can be arranged with the manufacturers.

The handling of large fabricated assemblies of aluminium is much easier than similar-sized pieces of steel and seldom requires the use of cranes. The large 65 ft. truss shown in Fig. 2 does not require any travelling crane and can be easily handled.

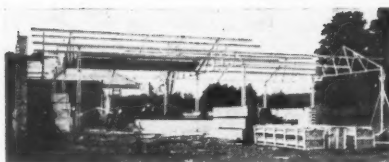


Fig. 6: Typical crating for export

**Connections.** Aluminium alloys can be joined together with rivets or bolts. Welding is at present not sufficiently advanced for structural purposes. For rivets up to  $\frac{1}{2}$  in. or  $\frac{3}{8}$  in. diameter aluminium alloy rivets are suitable, and are driven either with pneumatic hammer or with squeeze-type machines; these latter giving slightly better results. Ordinary hot or cold-driven steel rivets can be used for the larger diameters, the high heat conduction of aluminium preventing any appreciable adverse effect on the heat treatment of the alloy. For the higher strength alloys, where full use can be made of their strength, chrome steel rivets are useful as a smaller number of rivets is needed.

A special type of aluminium rivet which is particularly useful for 'blind' riveting is the 'Chobert', a hollow rivet driven with a pneumatic gun from one side of the section only. It is therefore the only satisfactory solution for hollow sections. This open rivet can be filled with an aluminium pin and the strength of the resulting rivet is only slightly lower than that of a solid rivet of the same material. They can now be obtained in sizes as big as  $\frac{3}{4}$  in. diameter, and represent a very valuable contribution to the art of riveting.

For bolts, steel is quite suitable provided it is galvanized or sheradized. The difference in electric potential between steel and aluminium is very small, and provided the steel is preserved electrolytic action is unlikely to be of any consequence.

**Glueing with Synthetic Adhesives.** A process which has not yet been used to any great extent in the fabrication of light alloys is glueing with synthetic resins, although it is employed quite extensively in the manufacture of aircraft. The economical design of aluminium usually entails the use of thin-walled sections, and difficulty is often encountered in the design of riveted connections because the thinness of the walls causes high bearing stresses. This can be overcome by glueing on strips of aluminium over the area to be riveted and thereby increasing the area under bearing. It is also useful in making up the loss of area in tension members caused by rivet holes. The process is not yet very popular with ordinary fabricators as it requires special cleaning treatment, but there is no doubt that it has many applications which will be developed. Another application of the glueing technique is sandwich construction, where two skins of aluminium sheet are glued on either side of some filling material such as cork, expanded ebonite, etc., to form a 'sandwich' in which the bending stresses are taken by the aluminium skins and the shear by the lower strength filler.

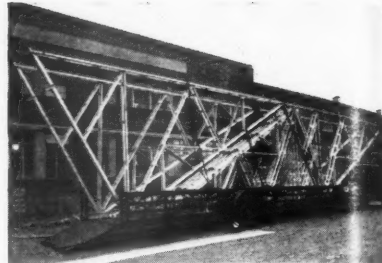


Fig. 7: Very large trusses loaded on 60 ft. trailer

This can be produced in large sheets and is obviously suitable for prefabricated walls and roofs, a most valuable quality being its high heat insulation.

**Design as Affected by the Relative Costs of Materials and Fabrication.** The relative cost of materials and their fabrication will obviously have a great influence on their characteristics. When steel first came into general use it was expensive to manufacture but cheap to fabricate. Early steel structures are often quite remarkable for their economical use of material and preciseness of detail. The importance of simplicity of painting was not so great with labour costs lower, and a great deal of lattice construction was therefore used. With decreasing material charges and increasing fabrication costs, design gradually changed until the maximum use of simple rolled sections, even though more material was used, resulted in a cheaper structure and one which was cheaper to paint. The scarcity of material during the War and subsequent aftermath and improvements both in welding and pretreatment with some form of zinc coating before painting, have revived to a certain extent the lattice girder, but in general the characteristics of steel design are likely to be simplicity of fabrication. This somewhat lengthy description of the evolution of steelwork design has been given to show the form which aluminium design should take. We are at the same stage with aluminium as the early stage of steel—expensive material, cheap fabrication. Very approximately (and not including overheads), an alloy costs £210 a ton to buy and about £30 or one-seventh of the material cost to fabricate. The aim of design should therefore be to use as little of the metal as possible, and fabrication can be increased considerably, though naturally it must be kept within bounds. These conditions result in the use of built-up latticed members in preference to plated sections, and to thin-walled sections with material concentrated at the areas of greatest stress.

The ease with which special sections can be produced opens up great possibilities of integrating into the structure components which are normally non-structural, and in this respect the alloys resemble reinforced concrete, although their uses are much more limited. Angles, other than right angles, can easily be designed, so that shapes which are practical only in welded



Fig. 8: End portion of bascule bridge being lifted into position at Hendon dock, Wearmouth



Fig. 9: The Hendon dock bridge completed, showing bascules raised

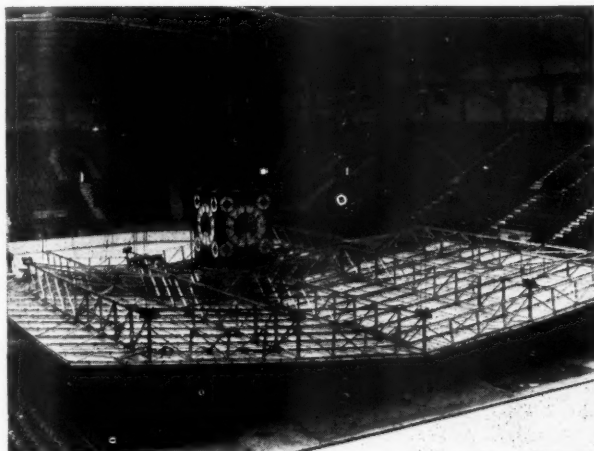


Fig. 10: Harringay Arena sounding board, lowered

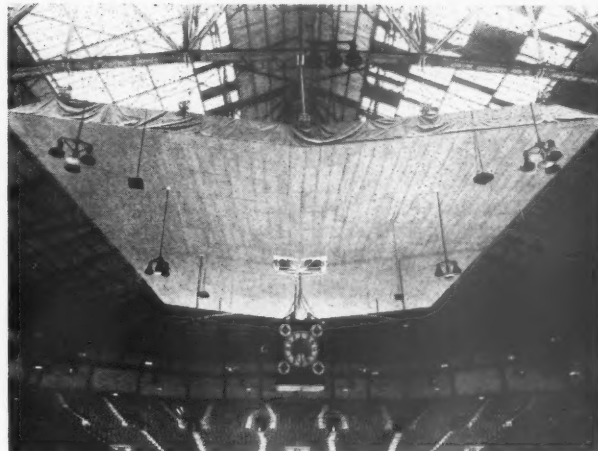


Fig. 11: Harringay Arena sounding board, raised

steelwork become possible in riveted or bolted aluminium. Fig. 3 shows a 'space frame' construction in aluminium made possible by the use of special extrusions.

**Packing.** Packaging and transport of aluminium structures are important, especially for export. If large components are assembled the resultant packages are liable to be very bulky compared with their weight, and the cost of transport per ton of aluminium becomes excessive. On the other hand, it may be very desirable to reduce the amount of site fabrication to an absolute minimum because of lack of skilled labour. One simple way of overcoming the difficulty has been evolved called the 'pin-up' system, an example of which is shown in Figs. 4 and 5. Instead of connections being formed by several bolts or rivets, only one large bolt or 'pin' is used, the members being specially designed

to cope with the difficulties arising out of this arrangement. All members are then sent out 'piece small' and can therefore be crated very compactly and economically. Road transport over difficult country is quite feasible, and the assembly takes only a few more bolts than the more normal piecing together of fabricated pieces. Fig. 6 shows an aluminium structure going through an erection test, with parts crated for despatch on the right-hand side.

Fig. 7 shows a consignment of very large fabricated roof trusses being transported in a light 'Queen Mary' type of trailer. This, of course, would be impossible with steelwork.

**Erection.** Erection of alloy structures is a very different problem from steel erection. Much can be done with man-handling and step ladders. With bigger structures where cranes are necessary, very large portions

can be assembled on the ground, where work is easier, and lifted into position. Components are less likely to get damaged than steelwork components because the pieces are more easy to man-handle and also because the stresses set up by dropping are only one-third those caused by steel and can often be safely resisted without permanent deformation. Fig. 8 shows a very large section of the bascule bridge at Hendon Dock, Wearmouth, being lifted into position, having been brought down by barge. Fig. 9 shows the complete structure.

**Typical Aluminium Structures.** The 'typical' aluminium structures on a large scale may well be a triangular space frame, such as Fig. 3, with secondary members built up from small sections and latticed or battened together. A word of warning is necessary against thinking that the light



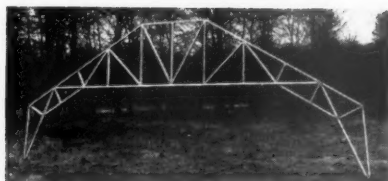


Fig. 12: 2-pin portal frame for a greenhouse

weight of the aluminium alloys results in a light-looking structure. As explained above, the low modulus of elasticity in comparison with steel requires bigger and deeper sections or built-up sections, and while these may be economical of metal they do not necessarily look as if they are. By skilful design much can be accomplished. Typical structures are shown in the illustrations. Figs. 10 and 11, showing the sounding board at the Harringay Arena, are particularly interesting as they show what can be done with aluminium to existing structures, without adding appreciably to the stress due to dead weight. Another interesting structure is shown in Fig. 12.

**Corrosion.** First of all it must be emphasized that the term 'corrosion' is a metallurgical one. It is unfortunate that so much attention has been given to this question because to the ordinary person the term corrosion conjures up visions of metal crumbling rapidly to pieces. Nothing could be further from the truth. Prolonged tests by the American Society for Testing Materials have shown that the deterioration under severe atmospheric conditions is not such as to cause any serious loss of strength in even the least resistant of the alloys. Furthermore, the resistance of pure aluminium to corrosion is higher than that of copper and second only to that of commercial nickel.

The corrosion, or surface oxidation, of aluminium alloys under atmospheric exposure is very interesting, and is peculiar to aluminium and chromium. It starts oxidation immediately on exposure, and in the open air specks of corroded metal appear which give the metal quite an alarming 'corroded' appearance. This layer of oxide, however, is not only very thin but affords a very high degree of protection from further corrosion, with the result that, unlike other metals, the rate of corrosion decreases rapidly with time. Research by Champion has shown that after the first few hours the rate of corrosion decreases with time according to an exponential curve, which means that after a few years further corrosion is very small and eventually ceases. His calculations show that under the most severe atmospheric condition—a tropical marine site—the corrosion of the least resistant of the alloys will never be sufficient to reduce its strength below the .1 per cent proof stress, provided that the original thickness is not less than .055 in. If we allow a factor of safety of 2 this means that with a thickness of metal of .11 in. a structure will always be reasonably safe. A much more highly resistant alloy would be used under these



Fig. 13: The Saguenay bridge at Arvida, Canada. 504 ft. span

conditions. It is safe to say that under normal atmospheric conditions, and particularly in interior work, the minimum thickness which can be conveniently extruded (and anything less than .08 in. is seldom justified) will be adequate to ensure indefinite life to an aluminium alloy structure.

The resistance to corrosion varies with the type of alloy, and is intimately bound up with composition and structure. The magnesium-aluminium alloys are highly resistant and are used extensively in marine work. The magnesium-silicon group come next, and are only very slightly less resistant than the plain magnesium alloys, while their higher strength makes them ideally suited to structural work.

The copper-bearing alloys are not so resistant, and their behaviour is interesting. Under moderate conditions of exposure their resistance is high, but if the conditions are severe or prolonged, minute quantities of free copper may be deposited from the corroded skin, which immediately give rise to electrolytic action and the rate of corrosion is greatly increased. Under mild conditions, such as for instance in the framework of buildings protected from the elements, these alloys are quite satisfactory and being the first to be used have given excellent service for over forty years. They should, however, be avoided in positions of severe exposure, and a magnesium or magnesium-silicon alloy used, depending on the strength required.

A word of warning is necessary. Under certain conditions which are not always obvious, rapid corrosion is possible. When this occurs a sample of the metal should be sent for inspection to any of the main manufacturers to ascertain the cause of failure. It will be found that the reason is either the wrong use of the metal, or the

wrong alloy. For instance, aluminium pipes can not be used for water supply as the lack of oxygen prevents the formation of the protective coating of oxide and trace elements in the water can attack the metal. Where there is any likelihood of corrosion, aluminium should be painted either with bitumen, where appearance is not important, or with ordinary oil paints on a zinc chromate primer.

**Anodic Action with Other Metals.** Aluminium is highly electro-negative to most other metals, which means that when in contact with a different metal it will usually be affected if corrosion takes place. The exceptions are zinc and cadmium, and for this reason any paint on aluminium should have a zinc chromate primer. Steel has very little electrolytic action with aluminium alloys, but it will, of course, rust unless suitable precautions are taken. Copper, brass, and nickel are all highly electro-positive to aluminium, and contact must therefore be avoided. If it is unavoidable that these metals should be in close contact, the aluminium must be painted with bitumen or fibre washers or sheeting placed in between.

#### *Electrolytic Potential of Various Metals against Pure Aluminium*

Metal	Potential (M.V.)
Magnesium	-850
Zinc	-350
Cadmium	-20 to 0
Pure aluminium	0
Magnesium-aluminium alloys	+100
Copper-aluminium alloys	+150
Iron—mild steel	+50 to +150
Lead	+250
Tin	+300
Brass	+500
Nickel	+500
Copper	+550



**Painting.** The painting of aluminium structures presents few difficulties, and as the metal is not subject to the creeping of rust under painted surfaces the paint will last much longer than on steelwork. Adequate surface preparation is essential, and there are many different processes. Grease must be removed, and it may be necessary to have a degreasing operation if much grease is present. The primer should be zinc chromate, but once this is on almost any paint can be used for finishing, provided it has no effect on the primer. Aluminium paint is a very durable finish for large structures, due to the closely-packed metallic flakes in the surface layers.

**Conclusions.** The aluminium alloys are an entirely new family of materials with their own peculiar assets and disadvantages. It is perhaps unfortunate that aluminium structures should come into prominence as a substitute for steel in time of scarcity. As has happened throughout the history of architecture, a new material is treated in terms of existing materials until its individuality becomes established. The three great assets of aluminium are its light weight, its high resistance to corrosion, and the ease with which special extrusions can be manufactured. Its main disadvantage is its low modulus of elasticity. If these four characteristics are used as a basis, and combined with expensive material costs and low fabrication costs, the 'typical' aluminium structure will soon evolve, and in its own sphere will compete with other materials.

The three assets are to a certain extent complementary. It would not be possible to make full use of the light weight if special thin sections could not be produced, and these in turn could not be used if their high resistance to corrosion did not reduce to harmless proportions the loss in strength. Very large structures are the obvious field for aluminium alloys, and it is to be hoped that they will be used for all future large-span bridges and roofs over 200 ft. span. A start has been made in Canada with the Saguenay bridge of 504 ft. span shown in Fig. 13, but it is hoped that alloys will be used on a bridge the size of Sydney Harbour Bridge, in the not too distant future.

## DISCUSSION

**Mr. F. J. Samuely, A.M.I.C.E.:** There are many questions which are not yet quite clear about aluminium and aluminium alloys. There is first of all the question of economics or when aluminium should be used. The fact that aluminium has greater corrosion resistance than steel has to be taken into account, and quite often it may be that an aluminium structure, although more expensive than a corresponding steel structure at prime cost, is in actual fact cheaper because of the smaller cost of upkeep. But how are we to put this in terms of pounds, shillings and pence? Very often it depends upon whether the client wants to take upkeep into account or is only interested in prime costs. Sometimes it is a question of licence—how much

money a client is allowed to spend. In that case he may say 'I can only spend so much, but I do not mind how much I spend later.'

The question of corrosion is a very vexing one. We know that steel corrodes for different reasons from aluminium alloys. Usually it is acids which make steel corrode, and alkalis which make aluminium corrode. To what extent? Well, sea air is noxious to aluminium, yet I know of a lot of aluminium windows which have kept very well in maritime air. On the other hand I also know of some aluminium frames for glasshouses which came into contact with earth containing a high proportion of salts and were eaten away to less than half in six weeks. This may be because aluminium should not come into contact with earth, but it just makes one feel a little doubtful at times as to whether there are still some unknown factors which must be taken into account. Mr. Wood did not mention anodizing, which seems to be of importance, because so far as I know anodizing would at least do away with that danger. It costs a certain amount of money, but with the larger sections I do not think the cost would be so very important.

What is the situation about welding? Obviously if welding is to be excluded completely from aluminium a good bit of the saving of weight over steel will be lost, and therefore it will be relatively more expensive. I think that today we can be sure of spot welding in aluminium—it can be done as well as in steel.

The next point is the question of when, and in what circumstances, aluminium alloys are really of good use. Mr. Wood's final remarks referred to large-span girders. That is apparently a clear issue where there is a saving of so much on weight. That in itself is a sufficient reason for using a more expensive metal, but is there not also a case for short spans, say, up to 40 ft.? I have found, personally, that I could not use extrusions in this case because as extrusions have to be of a certain thickness it was not possible to get weak sections unless they were very small over-all.

**Mr. J. E. Temple, D.I.C.** (read, owing to his absence): One can say that in the technical sense there is little today that can be built in steelwork which can not equally well be constructed in one or other of the strong alloys of aluminium. In design we meet difficulties, usually arising from the greater elasticity of the material, exemplified by liability to individual flange failure of thin constructional sections, or of long slender beams to fail laterally at loads much below the loads at failure of corresponding steel units. Such difficulties can usually be countered by careful design.

The one great disadvantage of aluminium, and probably its only real disadvantage as compared with alternative materials of construction, is the very high comparative cost of the metal. An aluminium alloy joist today costs three times as much as an exactly similar steel joist. Nevertheless, the cost of aluminium may be expected to fall gradually over forthcoming decades, and it may well be that in

fifty years from now aluminium will have displaced steel from its present position and will be the most widely used metal. However, the architects present will be more concerned with the position as it is today. For ordinary stanchion and beam building frames the high cost of aluminium generally rules it out at once from consideration.

The one direction in connection with light building structures in which aluminium already bids fair entirely to displace steel, and that in the very near future, is that of light roofs. There are two classes of roof to which this particularly applies. The first is that of lightly-loaded roofs of very wide clear span. In this case in steel or concrete, much of the material put in is there merely to support the self weight of the structure. Thus so much material is saved when light aluminium trusses are used that these may even be lower in total cost than their steel or concrete counterparts.

Another direction in which aluminium is already beginning to displace steel is in the large areas of ridge and furrow roofing, widely used abroad in light shedding and buildings for various purposes.

It is the function of the engineer to use as far as possible the most economical material in each particular application. The architects' ideas must additionally be influenced by aesthetic considerations. For the structures of the lighter class of roof, aluminium may very well prove to be the most advantageous material to use, and the future may well see aluminium displacing steel in this direction. On the other hand for medium and heavily-loaded structures considerations arising from the relatively high cost of aluminium are likely to prevent any wide use being made of the material for a long time to come.

**Mr. R. A. F. Riding [4]:** There is one point upon which Mr. Wood might perhaps enlighten us. We have heard about the behaviour of aluminium in weather; we know the effect of fire on steel structures, and we experienced magnesium bombs during the war. Could Mr. Wood tell us how aluminium behaves from the point of view of fire?

Mr. Wood has not told us anything about the progress of the application of these very interesting alloys for the exterior of buildings. It might be interesting to know whether they can be used in conjunction with other materials either for decoration or for other purposes.

**Mr. J. C. Bailey** (Institute of Metals): Mr. Wood dealt at some length with the painting of aluminium, but perhaps something should have been mentioned of the pre-treatment after de-greasing the metal. One does not want to get into the situation where, having cleaned and de-greased sheet metal and then applied paint, the paint comes off all too soon. With the very bright high finish, particularly of sheet aluminium, it is advisable to include an acid pre-treatment.

The opener of the discussion referred to attack by soil. Soil corrosion, whether considered in relation to aluminium or any

other material or metal, is a complex problem due to the great variety of soils. That makes corrosion work rather difficult. However, there is a comprehensive series of soil corrosion tests on aluminium and various alloys now in progress, and so in the course of time we should have the exact information that is apparently desired. I think possibly it is perfectly safe practice where these materials are in contact with the soil to cover them with bitumen before erection. The same thing applies in connection with aluminium used with other building materials. A comprehensive long-term series of investigations on the behaviour of the alloys in contact with various standard cement and concrete mixtures is being carried out.

I hope very much that looking into the future the supposition that new sources of energy will bring down the price of aluminium is a well-founded one, but I think we shall have to stay where we are at the moment and plan with what we have got.

**Mr. Freeman Horn** (Institute of Metals): The name duralumin does not mean hard aluminium. It is derived from the firm which developed it, the Duren Metal Works. As Mr. Wood said, it was largely an accidental discovery, and it is interesting to note that the composition which Wilm hit on more or less by accident, namely,  $4\frac{1}{2}$  per cent copper and  $\frac{1}{2}$  per cent magnesium, remained the same until recent years.

With regard to anodizing treatment, I have in my possession some metal from the first Zeppelin ever built, and that was pure metal. The Zeppelin was destroyed in 1907, and that sample, being pure metal, is completely uncorroded to this day. I have also a piece of the framework of the first Zeppelin of duralumin, not anodized, and that has fallen to pieces. I also have a piece of the first Zeppelin which was completely anodized and it is in as good a condition as the pure metal.

**Mr. L. E. Ward, A.M.I.Struct.E.:** Having seen and studied the structure for an oil company I was most impressed, and having worked out the weights found it an economic proposition.

Aluminium has a much better appearance than steel, and on those grounds a little increase in cost can be borne. It is also very useful in the design of additional stories to buildings.

With regard to large-span bridges, my opinion is that aluminium could not be used for spans exceeding 50 ft. on the grounds of cost. I do not believe that the dead load is so important as the live load, but on large bridges it might not be possible.

**Mr. E. W. Salt:** One point mentioned by Mr. Wood was the fact that a job involving £5,000 worth of extruded material will stand four or five special sections. I would point out to architects that in practice that would not be a very good thing to do, because the manufacturers would soon find themselves loaded up with stock, since

it is very difficult to have special sections produced in the exact quantities required.

Another point was made that the application of rivets was largely dependent on the question of the development of suitable tools. That leads to a possible complication in long-span bridges, because I do not think facilities are in existence for making suitable joints. It is not advisable to use steel rivets, because if over-strained they cause distortion.

The question of when to use aluminium alloy structures is a matter which requires considerable study in each particular case, and it must be studied on merits, but I imagine that this state of affairs will cease when sufficient experience of practical use and cost enables us to assess when it is more economic and satisfactory to use it.

**Mr. A. W. C. Barr [4]:** May I ask Mr. Wood to be more specific on the question of corrosion of unprotected sheet in an ordinary English atmosphere? He mentioned 0.05 as a corrosion figure, if under one-twentieth of an inch.

**Mr. M. W. Kohler:** Mr. Wood has talked of aluminium and compared it in some ways with steel, claiming its advantages, mainly on the ground that it is lighter than steel. Last month Mr. Walters gave a lecture, and he compared steel with timber, and he said that timber was better than steel because it was much lighter, but neither speaker has compared timber with aluminium. Would Mr. Wood consider that timber is perhaps better to use for domestic small trusses than aluminium; does he think it would be cheaper?

**Mr. C. S. Brimelow** (Institute of Metals): I think we must face the fact that aluminium has a lower melting point than steel, so that in a serious fire where the whole building is heated the time it would take for the building to collapse would be less than with a steel structure. I do not think, however, that this should be stressed. So long as we are aware of that and design our buildings accordingly the fire risks should be no greater with aluminium.

We are still faced with the problem of extracting aluminium economically, that is the crux of the problem. I think it could be used more if it compared favourably with other materials from the point of view of initial cost. There is really a very strong case for paying more for aluminium, bearing in mind that the maintenance and labour costs are going to be less throughout its life.

The question of considering protection for aluminium is a very important one and should always be taken into account when using it as a building material.

**Mr. Wood** (in reply). With regard to welding, this can be done, but the difficulty is not to destroy the heat treatment. Welding is not yet a practicable proposition in the same way as it is for steel, but the latest developments in argon arc welding hold out hope. Anodizing is a suitable method of protecting aluminium.

Not very much experience has been gained regarding fire, but the heat conductivity of aluminium is very great, and it carries away heat very quickly, although its melting point is lower than that of steel.

When speaking of bridges I had in mind something like spans of 1,000 ft. or more, such as Sydney Harbour bridge. I have worked out designs for hangars and found that they compete with steel at about 180 ft. span, and thereafter they are definitely cheaper than steel because of their weight.

The question of stock is a very vexed one which I have discussed with manufacturers, and it has not been solved yet. Steel manufacturers can afford to carry large stocks, and so can the user, but with aluminium you do not want to carry stocks at all.

The thickness mentioned of one-twentieth of an inch was for duralumin, which should not be used for sheets. The sheets most popularly used are duralumin coated with pure aluminium, and they have a high resistance to corrosion. The ordinary aluminium sheets, commercially pure or with a small percentage of magnesium or manganese, all have a fair degree of resistance to corrosion, and their resistance is much higher than the figure I mentioned of 0.05, which was for the least resistant of the alloys.

A question was asked about comparing timber with aluminium. Timber is a very nice material, and for domestic uses it is unrivalled. It is easy to use, light, strong, normally easy to obtain, and even now it costs less than any other material. Since the recent introduction of the bulldog connector it has become comparatively easy to have timber trusses of large spans, and they would compete with aluminium except in the matter of fire resistance.

The availability of suitable tools will limit the maximum size of structures, but where there is a demand an answer will come. A few years ago rivets were three-eighths of an inch, and now they are three-quarters. That is one example of the steady improvement that is taking place.

**Acknowledgments.** The author wishes to thank the following for permission to reproduce photographs: Figure 1, Aluminium Development Association; Figures 2, 7, 10 and 11, Structural and Mechanical Development Engineers of Slough; Figure 3, Ove Arup and Partners, English Bridge and Structural Engineering Company Limited; Figures 4 and 5, Ove Arup and Partners, Staffordshire Steel Construction Company Limited; Figure 6, Thorpe Brothers of West Molesey; Figures 8 and 9, River Wear Commissioners, Head Wrightson Limited, British Aluminium Company, Aluminium Development Association; Figure 12, Head Wrightson and Aldean Limited, Slough; Figure 13, Built by the Dominion Bridge Company Limited for the City of Arvida. Photograph by courtesy of the Aluminium Company of Canada Limited.



Worcester Terrace, Clifton, by Charles Underwood, was completed in 1853

## The Bristol Society of Architects, 1850-1950

By Lance Wright [A]

ON 3 APRIL 1850 a baker's dozen of Bristol and Bath architects gathered at the Academy of Fine Arts in Unity Street to found what was destined to be the second of the Allied Societies of the R.I.B.A., that of Liverpool having been the first.

In contrast to an already existing ecclesiastical body which went by the name of 'The Bristol and West of England Architectural and Archaeological Society', this original Bristol Society of Architects was, above all, professional in aim. But its interpretation of the profession was almost medieval in comprehensiveness. For in addition to the architects themselves and to the various classes of amateur and honorary members which architecture at that time could always enlist, it comprised an important class of Associate Members—surveyors, engineers, plasterers, anyone who had anything to do with building. And in effect a substantial group of these were persuaded to join. But a conception such as this could not survive in Victorian society, and it was not altogether surprising that after a few years the Associates became disgruntled at the part allotted to

them and that their subscriptions became increasingly difficult to collect.

The alliance with the Bristol Academy of Fine Arts—shortly to receive the Royal Charter—was, in all probability, engineered by John Scandret Harford, a spiritual survivor of the 18th century, who many years before had commissioned Nash to build Blaise Hamlet and who was now the President. Without the Academy, it is doubtful whether the architects could have raised a society at all; for there could not have been more than six or eight firms practising in Bristol and perhaps half as many again in Bath. As it turned out, the Academy was to prove a sheet anchor throughout the century: discreet and undemanding, lending a prestige which even the architects' frightful bickering could not altogether dissolve and even, on one occasion at least, putting money at their disposal.

The Society of 1850 lived on until 1858. That year saw the completion of the new Academy premises in Queens Road—designed as a joint effort by the architects in return for their perpetual lodging—and

ought to have been a year of triumph. But, unfortunately, the melting away of the Associates and two notable failures to enforce discipline had sapped confidence, and the Society went into cold storage for four years.

It was to be expected that this first Society, fresh in its academic connection, should have favoured the Greek and Italian taste rather than the Gothic, despite the presence among the founders of such men as Thomas Fuller, the future architect of the Canadian Houses of Parliament, and Charles Hansom, brother to Joseph Aloysius and designer of the Society's sternly Gothic crest. During the first two or three years the senior Fellows—notably Richard Shackleton Pope and Charles Underwood—had been busy contributing the last Neo-Grec buildings to Regency Clifton; though the younger men had long since been won over to the Italianate. By 1854, when the Society first turned her attention to the Academy building, the weight of Bristol architect opinion had apparently gone over wholly to Italian. For though the academicians cried out





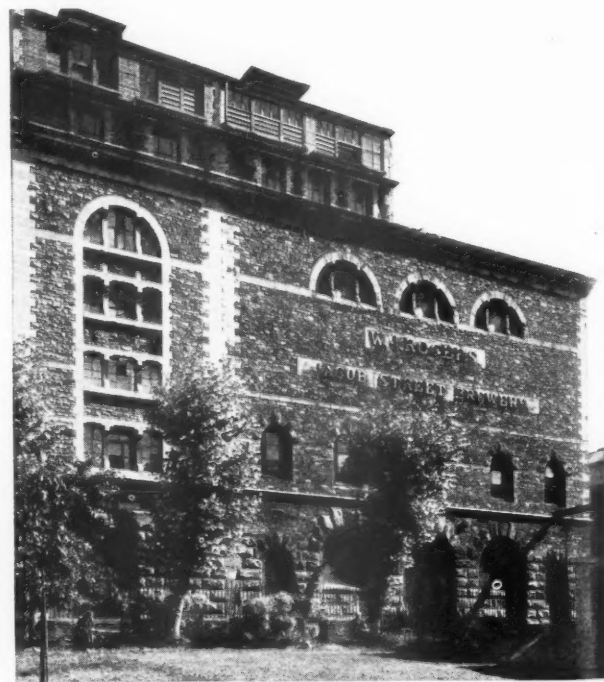
Granary on the Welsh Back, 1869. Architects: Archibald Ponton and William Venn Gough



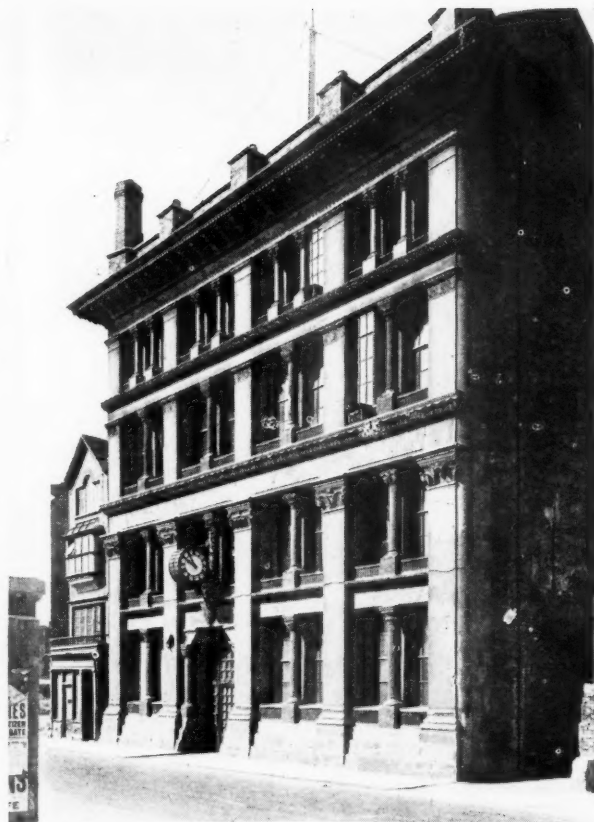
Warehouse, 104 Stokes Croft, 1862. Architect: Edward William Godwin



Thomas Soap Factory, circa 1860. Architect: probably William Bruce Gingell



Rogers Brewery, Jacob Street, circa 1865. Architect unknown



Office of W. D. and H. O. Wills, Redcliffe Street, 1865. Architects: Foster and Wood



Factory at Raleigh Road of W. D. and H. O. Wills, 1904. Architect: Sir Frank Wills

persistently for Greek, the architects, pointing out that the Italian gave greater freedom in planning, humoured them only insofar as they allowed the studio interiors to be fitted with Greek detail.

The Society which was revived in 1862 was of a very different temper, principally because the prime mover in it was Edward William Godwin, the theatrical archæologist who ran away with Ellen Terry and who was destined to be one of the leading æsthetes of the eighteen nineties.

It would not be too much to say that Godwin likewise ran away with the Bristol Society of Architects. An excellent publicist—witness his vivid reports of excursions in the Press—and a prophet of the all-embracing Ruskinian sort, creative, sensitive, earnest, the members seem to have been fascinated with him and to have carried out without demur everything which he suggested, whether as Secretary and Librarian or as Vice-President.

Briefly, the effect of his three year regime was to convert the Society according to the pattern of the late Gothic Revival. In 1864 he engineered a grave constitutional change, whereby the name was altered to 'The Bristol Architectural and Archæological Society' (the 'Bristol and West of Eng'and' had died some years earlier), and whereby what before had been

a strictly professional body was converted into an instrument for general Cultural Improvement, committed to the ideals of the Revival and peopled in the main by amateurs and enthusiasts. The architects were relegated to a corner where they could keep their dreary professional legislation to themselves.

The one positive and enduring notion which sprang from Godwin's surprising leadership was his insistence that a society of architects had an immediate responsibility for architectural education. Though the Society collapsed almost as soon as he left for London, and appears to have remained so for a matter of twenty years, this thought and the memory of the class which he actually instituted, survived and had a part in the next and last revival which was to be undertaken by his one-time partner, Henry Crisp, in 1888.

Though Godwin monopolized the Bristol architects' political life, his monopoly in the field of design was not so complete. For Bristol in the sixties was favoured with the presence of a coterie of designers who gave her an idiom of her own and thereby endowed a quite particular character upon her commercial hub. This idiom has since been called 'Bristol Byzantine', a name deriving from Foster and Wood's taste for Byzantine ornament. But it might with

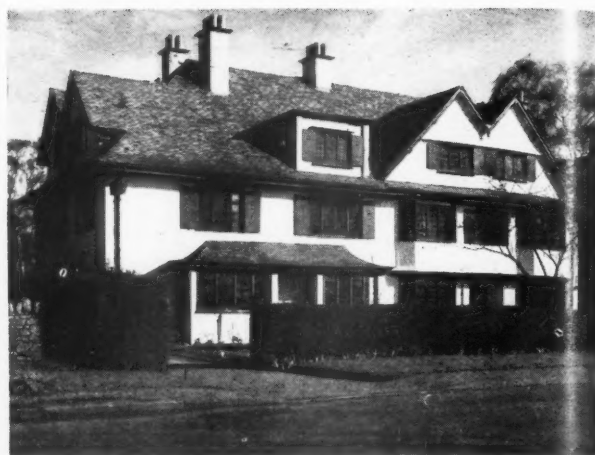
equal justice have been called Bristol Florentine or Bristol Venetian. Usually arcuated, the buildings depend for their effect upon a rich, flat ornament and upon the repetition of a simple motif. Thanks to the last war, the surviving monuments are very few: they are confined, in place, to the three central wards of the city and, in time, to the years 1860-75; and yet they have set their seal upon Bristol far more surely and indelibly than did any of the building of the 18th century.

Edward Godwin undoubtedly subscribed to this result. So did John Foster, John Wood and William Bruce Gingell. A subscriber by proxy was George Edmund Street, whose work 'The brick and marble architecture of the middle ages', must have been a pattern book for those who rebuilt Victoria Street in the early seventies. But the crowning piece, the celebrated granary on the Welsh Back, was the work of Archibald Ponton, the brother of a photographic pioneer and a man about whom we know all too little.

Jumping ahead twenty years, it is surprising to realize that Henry Crisp, who had been elected a member in 1851, had been the partner of Godwin in the sixties and was now, in 1888, the restorer of the original B.S.A., was, in the following year, to take into partnership a very up-and-



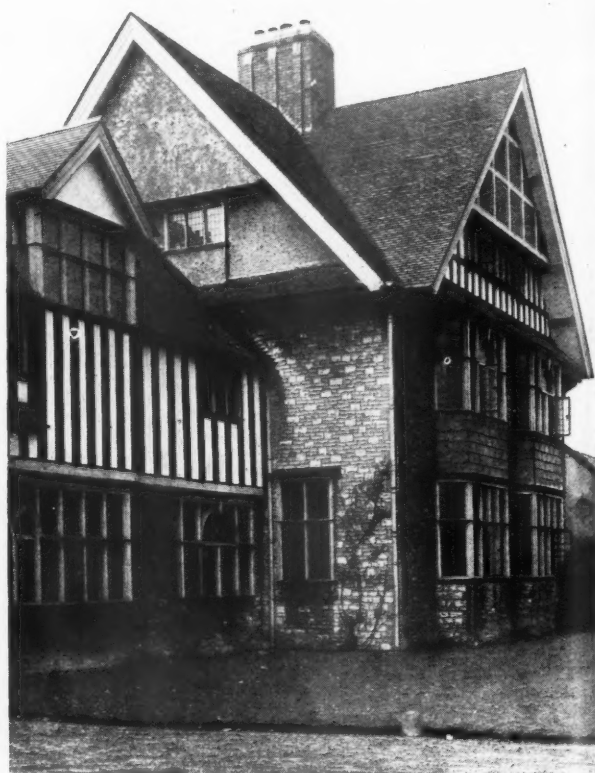
Grasmere, Rockleaze. Architect: Edward William Godwin



The White House, Leigh Woods, 1900. Architect: Henry Dare Bryan



Codrington Place, Clifton, 1852. Architect: Richard Shackleton Pope



Industrial School, Knowle, 1890. Architect: John Dando Sedding

coming young man, George Herbert Oatley, who is with us still; and that this firm of 'Crisp and Oatley' spans the whole life of the Society.

The revived B.S.A.—to judge by our sole remaining textual record of it, the Annual Report for 1889-90—was a sober, modest affair, modelled upon the original Society of 1850, but with all dubious, interesting

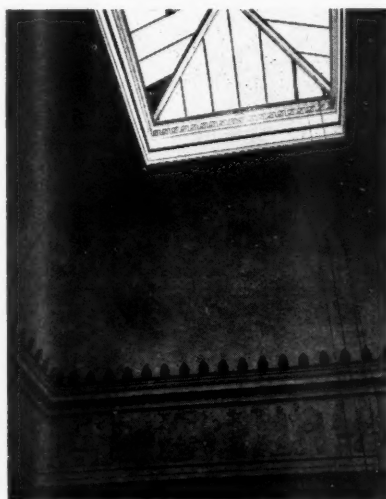
factors cut away. The lack of all minutes before the year 1914 makes it difficult to judge the influence upon it of such personalities as Frederick Bligh Bond or Sir Frank Wills. On the side of design it must be confessed that Bristol seems to have been drained of true architectural ability from about the middle seventies. Those who had made Bristol Byzantine either

died, or dispersed, or ran to seed. London had drawn away the men who were to effect the great changes of the last quarter of the century. The one other besides Godwin who might have made a difference to Bristol at this time, J. D. Sedding, disappointed by a complete lack of patronage, had left likewise for London in 1865; though he was to return the year before his





Detail of City Museum, 1870. Architects: John Foster and Archibald Ponton



Studio interior in the Royal West of England Academy, 1854-58. Designers: the Fellows of the Bristol Society of Architects. Final drawings by Charles Underwood and Henry Hirst

death to design his Industrial School, now the House of Charity, at Knowle.

But in the decade 1900-10 talent again flowed back into the West. The movement which is known loosely as the 'Craft Revival' took firm hold and was ably exemplified: in domestic work by Henry Dare Bryan, whose White House in Leigh Woods dates from 1900, and in most other classes by Edward Gabriel and by many others. Another element which changed the look of Bristol at this time was the large-scale release of red bricks from the Cattybrook works. These—which must have disgusted the Craft Revival men by their extreme recalcitrance to traditional

effects—were to be the staple out of which the great new factories—for the Bristol triumvirate of Fry, Wills and Robinson—were to be made. The local architects wrestled with them manfully, and it will generally be conceded that George Herbert Oatley and Frank Wills each arrived at a canon of red free Classic which, travelling round the world on the back of paper cartons, enabled Bristol architecture to strike the bell once more.

Whatever may have happened before 1914, the Society which re-assembled after the first world war was enthusiastic and terribly determined. Mowbray Aston Green has published his *History of the Eighteenth Century Architecture of Bath* in 1904, and this was followed, in 1923, by C. F. W. Denning's counterpart for Bristol. There is no doubt that this rediscovery of the 18th century gave to the Society of the nineteen twenties very much what the rediscovery of the medieval heritage had given to the B.S.A. of sixty years before. With the example of 18th century congruity ever-present in the imagination of each, the architects' corporate life between the wars flowed naturally into the town planning movement and into the grim struggle to secure the architect's right to be heard within the movement.

Despite the presence of a faithful spy—in the person of B. F. Brueton—in the Town Planning sector of the City Engineer's Department, the B.S.A. did not always get the hearing which she fought so hard for. But she was far from being disregarded altogether; and the outbreak of the second world war saw her faced with the challenge to produce an official design for the layout of the Tramway Centre.

By universal testimony, the guiding spirit during these years was the partner of George Herbert—now, in recognition of

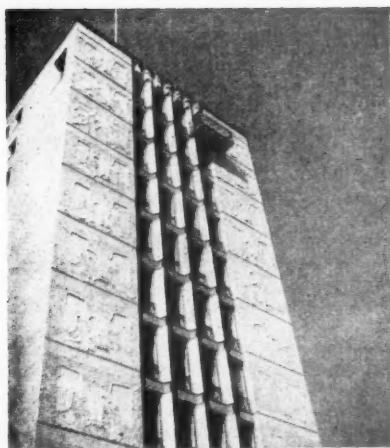


The University Tower, 1925. Architect: Sir George Oatley [F]. Photo: Reece Winstone

his University Tower, Sir George—Oatley, George Churchus Lawrence. Lawrence gave a heroic proportion of his time to the work of the society and in his person, Bristol was able to play an anxious, vigilant part in the grave professional issues which occupied the Institute between the wars: the chief being Registration, with the regulation of competitions a good second.

One last achievement of the Lawrence regime was the founding of the Royal West of England Academy School of Architecture. This was, in a sense, the epitome of all that the Bristol Society had stood for since its earliest beginnings. Time and again—and most resolutely during the brief Godwinian epoch—members had called for the setting up of some organized instruction; and their calls had usually issued forth in *something*, though never in what could seriously be named a school.

Statisticians would agree that it was not feasible to open a school even in 1921, when numbers were already so much greater. But the handful of students returning from the war, banded under the irrepressible leadership of Eustace Button, were so set upon it, that they felt justified in calling in the help of the Architectural Association in London and that faithful stand-by, the Royal West of England Academy in Bristol, and at the price of long years of absurd budgets and token salaries—to say nothing of the resourcefulness and social sense of the Principal, Guy Donne Gordon Hake—the Bristol Society of Architects was, in that year, gratified in her oldest and dearest wish.



Four views of the Lastenlinna, the children's hospital



Eliel Saarinen's Railway Station with the Post Office in the background

## A Visit to Finland

### By Dorian H. S. Prince [A]

Despite the existing restrictions on travel and currency in Finland, I was fortunate in being able to make a trip to that country during last summer. The journey was made on a small Dutch cargo boat which does the round trip London—Helsinki—Amsterdam regularly, in about three weeks, including a stay of several days in Helsinki for unloading and loading cargo. Unfortunately, the time spent in port was insufficient to make detailed inspections of the various buildings, and the language difficulty prevented me from obtaining much information on points of architectural interest, but the following brief notes are offered as a guide to the buildings illustrated:

The children's hospital, known as the 'Lastenlinna,' has recently been completed, and is situated on the northern outskirts of the city. We were received by the matron with the utmost courtesy, and were given a conducted tour over the whole of the building. Unfortunately, apart from the matron, who was too busy to take us round herself, there was no one available who could speak English, and here again many questions had to go unanswered. The building is most interesting, and there were many unusual points of detail, both inside and out, which were of considerable architectural interest. The actual hospital block is of four stories only, designed on a slight curve and containing wards considerably smaller than those normally provided in this country. Windows are consequently smaller, and this is advantageous in a country experiencing very cold weather over the greater part of the year. Double glazing is, of course, used throughout. The ward block is linked to the nurses' home by the administration block which contains the offices and consulting rooms, and which are notable for the excellent design

of the furniture and fittings. The staff quarters form the main feature of the scheme, and are contained in a block eleven stories in height. The hospital is also used as a training centre for nurses, which accounts for the large amount of staff accommodation; each floor is divided into separate rooms approached by a central corridor, and is provided with a utility room containing facilities for drying, ironing, etc., and also a rest room and lounge situated in the semi-circular end.

The external treatment of the elevations is most unusual, and contains some very interesting details. The granite face has a sparkling appearance in the sunlight, and on certain walls there are designs in low relief. The eagle motif which can be clearly seen in one photograph is representative of the hospital badge depicting an eagle with her young, and is symbolic of maternal love ready for every sacrifice. The different carved stone figures forming the mullions of the windows of the nurses' rest rooms are also of interest. Three architects, Elsi Borg, Otto Flodin and Olair Sortta, were jointly responsible for the design, including all furniture, fittings and decorations.

The Post Office is situated in an excellent position in the centre of the city. The walls externally are faced with stone of a warm yellow colour with dressings of black granite, and the repetition of the small windows to the offices on the upper floors makes an interesting pattern on the side elevation. The internal decoration and detailing are well executed, and the main post office hall containing the various counters is spacious and well lit by the large windows seen on the side elevation. It is rather unusual for a building of this size to be properly seen when in the centre



Above: The General Post Office. Right: The Market Place with Town Hall, President's Palace and Cathedral

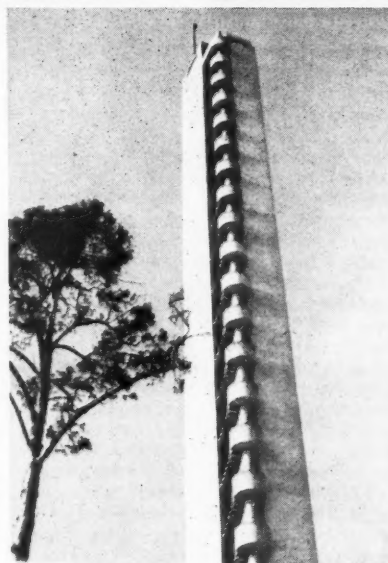
of a large city, but the Post Office has been very well positioned on an island site with a wide roadway in front and the open Stationsplatsen behind.

The famous railway station by Eliel Saarinen is a massive red granite building, which was opened in 1919. It forms an interesting contrast to the tall post office building which can be seen rising behind it.

The Olympic Games were to have been held in Helsinki in 1940, and the Sports Stadium was built for that purpose. But the war, of course, made this impossible, and the stadium is now being enlarged and finished off in preparation for the Olympic Games to be held there in 1952. The architects were Jäntti and Lindgrén, and the siting of the stadium is well conceived in the centre of a large natural open space with easy access and good approaches from a nearby main traffic route. The external rendering is glistening white, and the high tower dominates the scene.

Accommodation in the city is almost entirely in flats, and some well designed blocks of three and four stories may be seen in the suburbs. The two photographs are of typical blocks, and the open space planted with trees between the blocks is worthy of note. I was unable to see the internal arrangements of any of these flats, but the popularity of creepers used as internal decoration was noticeable in the windows.

The picture of the animated scene in the market square adjoining the South Harbour is included to give some 'local colour' and to illustrate some typical buildings of traditional design. That on the left is the City Hall designed by Karl Ludwig Engel, a German working at that time in St. Petersburg and commissioned by the Russian Government to design several public buildings in Helsinki. Next comes



The Tower of the Sports Stadium

the Swedish Legation and the Supreme Court, with the Presidential Palace, which was erected early in the 19th century, just visible at the far end. The building in the background is the Greek Orthodox Upenski Cathedral built of red brick in Byzantine style in 1868 by the Russian architect Gornostaief.

Finally, a few general impressions may be of interest: the popularity, in common with other Scandinavian countries, of displaying national flags as a decorative feature both internally and externally; the excellent examples of interior decoration, much use being made of natural wood panelling and accessories; two restaurants well worth a visit for a combination of good food and attractive design are the



Two typical blocks of flats

Fiskartorpet in lovely surroundings amidst pine trees and near the water's edge about two miles to the north of the city, and the Hok in the city centre notable for its well designed interior: the large departmental store of Stockmans and particularly the glass, furniture and lampshade departments containing innumerable examples of attractive design to gladden the heart, but not the pocket, of any architect: the huge Arabia potteries some miles outside the city and well worth a visit, especially the department specializing in hand-painted china figures for which the firm is noted.





Photo: Crown Copyright

An illustration from the Special Report on the Recruitment of Masons, published by the Building Apprenticeship and Training Council

## Stone Again

By A. H. Moberly [F]

AN ARTICLE in the R.I.B.A. JOURNAL a year ago discussed the serious outlook for the Masons' craft arising from the small number of stone buildings in progress, and the small number of mason apprentices now entering the building industry. At first sight it might seem a happy coincidence if shortage of work and shortage of workmen conveniently balance one another. Unfortunately that is not the case.

It is impossible to predict how long the present austerity standards in building will continue; but it would be pessimistic to assume no substantial improvement during the next ten years, whereas the number of apprentices recruited now will affect the supply of masons for 40 years ahead. The number of masons available is low; their average age is high, and unless a marked increase occurs in the number of apprentices recruited, the present shortage will grow more and more acute, with the result that stone-building will become practically impossible just at the time when the demand is likely to be greatest.

That is a grim picture; but several things have occurred recently which relieve the gloom. First, there has been a remarkable improvement in recruitment. In the period from September 1948 to September 1949 the number of boys entering the building industry as masons rose to 364 as compared with 144 for the previous year and 173 for the year before that. This latest figure is still considerably below the annual estimate of 550 recommended as a minimum 'target' in the Special Report on the Recruitment of Masons, published by the Building Apprenticeship and Training

Council in November 1948, but it is an immense improvement and reflects credit on all those who have worked to encourage recruitment.

Secondly, a Consultative Committee for the Stone Industry has been appointed 'to consider and advise on matters relating to the processing and use of block stone for masonry and monumental purposes, excluding questions of wages and conditions in the industry.' This committee represents master masons, quarry owners, trade unions and professional bodies throughout Great Britain, and has started working energetically under the chairmanship of a representative of the Ministry of Works.

Thirdly, the Licensing Officers of the Ministry of Works and their colleagues in other Government departments are adopting a most sympathetic attitude. Building licences are easier to obtain for buildings in which stone is to be largely used, and additional subsidies are available under certain conditions for housing schemes which are to be carried out in stone, provided that the Ministry is satisfied that the 'amenities' of the neighbourhood justify the additional cost.

Lastly, considerable progress is being made in some stone districts with mechanization in quarry working and in the preparation of slabs, heads, sills, mullions, etc. In some cases remarkable reductions in cost have been achieved by this mechanization: and cost is of paramount importance. Its importance is illustrated by the fact that several cases have recently occurred in which building licences have been obtained for stone buildings, but the projects have had to be abandoned because the building owners could not in the end face the cost of using stone.

What can architects do now to preserve the craft of masonry as a vital element in future building? First they can do their best to persuade building owners to use stone where it is appropriate, and not to be content with inferior substitutes. Secondly, they can encourage quarry owners and master masons in their efforts to reduce costs by mechanization. Mechanization may in many cases involve some considerable degree of standardization, and it is therefore essential that architects should co-operate with quarry owners and master masons in the design of standard sections likely to prove widely acceptable in the district concerned. Lastly, architects may be called upon to exercise some patience while supplies of stone—and still more supplies of masons—are uncertain. It is only by the exercise of such patience that the craft can be put upon its legs again. If architects neglect the use of stone now, because it is likely to involve some difficulties, there will be no work available for the training of new apprentices, quarries will close down, and later on, when masonry is vitally needed for public and private building, neither masons nor stone will be procurable.



## Practice Notes

Edited by Charles Woodward [A]

**IN PARLIAMENT. Building Licences.** Asked why it was necessary for a local authority to surrender one of its quota of licences for permanent houses where application is granted for the adaptation of a hut or pavilion purchased privately and off licence, before the applicant can erect or adapt the hut as a temporary dwelling instead of coming out of the permissible ceiling allocation of money for repairs, conversions and provision of additional housing, provided that the architectural plan has been approved by the appropriate authority, the Minister of Health replied: It is not necessary for a local authority to use its quota of licences for permanent houses. Where a structure is approved by the planning authority for use as a temporary dwelling and conforms with the local bye-laws, the local authority may issue the necessary building licence out of their permissible ceiling for repairs and the like. (23 March 1950.)

**Property Values.** Asked if he would enable local authorities to purchase property at current market values, as under his present regulations they are unable to obtain the necessary premises, the Minister of Health replied: The basis of compensation on compulsory purchase was laid down by Parliament in the Town and Country Planning Act, 1947, and it is essential that local authorities should not pay more than this basis allows, as otherwise the purpose of the Act may be defeated. (23 March 1950.)

**Land (Change of Use).** Asked whether, as the amount to be paid to the Government when a change of use for certain land is undertaken is arrived at by no scientific method but by a process of bargaining, he will eliminate this anomaly where the land is to be used for houses to be built to cost less than £1,500, the Minister of Town and Country Planning replied: I do not accept the statement in the first part of the hon. Member's question, and I am not at present prepared to adopt the proposal in the second part. But I have asked the Chairman of the Central Land Board to make suggestions to me, as soon as possible, for administrative simplifications and improvements. (28 March 1950.)

**Forms.** Asked what forms have to be filled up before permission is granted by the county surveyor to move a gate or change agricultural access to a field; and what is their cost, the Minister of Town and Country Planning replied: Such forms are settled by local planning authorities and I have no information about their cost, but I have a suspicion that a good deal of this sort of complication could be done away with, and I hope soon to take steps to this end. (28 March 1950.)

**CENTRAL LAND BOARD. Claims by Charitable Bodies.** In the February 1949 JOURNAL, at page 182, the advice given by the Central Land Board to charitable bodies on submitting claims on the £300 million fund was quoted. In paragraph 1 (d) it was said that applications should be submitted to the Minister not later than 31 March 1950. This date has now been extended to 30 September 1950. (Press Notice, 10 March 1950.)

**Register of Dealings in Land.** The Minister of Town and Country Planning has now made the Central Land Board (Register of Dealings in Land) Regulations, 1950 (S.I. 1950, No. 355). These Regulations provide for the keeping by the Central Land Board of a register of their dealings in land for public inspection and prescribe the fee payable for such inspection.

The Register will be kept at the head office of the Board, and copies of the entries in the Register will be kept in the local office of the Board for the region in which the land in question is situate. A fee of one shilling will be payable to the Board in respect of each inspection of the particulars relating to any one acquisition of land by the Board and any disposal of that land.

**Powers to Plant Trees.** The Minister of Town and Country Planning has issued a circular to local authorities calling their attention to their powers under the National Parks Act to plant trees, bushes, flowers or grass, or to improve the appearance of derelict land. The circular also asks planning authorities for the areas likely to be designated as National Parks to give special care to the planning of these areas so that their development as Parks at a later date should not be prejudiced. The National Parks Commission is to be consulted on any major development or urgent requirement arising in such areas.

**QUANTITY SURVEYORS' FEES FOR HOUSING SCHEMES.** The R.I.C.S. have discussed their Scale of Charges for Local Authority Housing Schemes with the Ministry of Health, and it has been ascertained that the Ministry would approve payment of fees as follows:

1. Where the 'scheme' consists of a single house only, the fee is to be 2½ per cent on the cost of that house.
2. Where the 'scheme' consists of a pair of houses only, or of pairs of houses each of different types, the fee is to be double the Scale, that is to say, £34 per house, subject, however, to paragraph 3 below.
3. Where double scale fees have been paid on any pair of houses in accordance with the preceding paragraph, and a pair of the same type for which the same bill of quantities has been used is repeated in another scheme, the fee will be £17 per house, in accordance with the Scale.
4. Where a contract for site layout works does not exceed £2,000 in value, the fee for preparing accurate bills of quantities will be 2½ per cent.

**Ancillary Quantity Surveying Services.** Agreement has been reached between the R.I.C.S. and the Ministry of Works, the War Office and the Air Ministry with regard to professional charges for ancillary quantity surveying services paid on day rates and for travelling and subsistence allowances. The new rates are effective from 1 June 1949. The Institution reference numbers of these scales are 10/10 (Ministry of Works); 12/10 (War Office); and 13/6 (Air Ministry).

**Day Work Charges. Heating and Ventilating Engineers.** A new agreement has been reached between the R.I.C.S. and the Association of Heating, Ventilating and Domestic Engineering Employers on day work rates. The agreement runs from 1 January to 31 December 1950, and is the same as that in force up to 31 December 1949, except that the percentage rates on labour are reduced by 7½ per cent.

**LAW CASES. Grove v. Jackman and Masters.** This was an action for damages for alleged negligence in connection with a survey of property bought by the plaintiff after receiving a report by the defendants (surveyors) that the brick bungalow was 'soundly constructed on good modern principles of building'.

After taking possession the plaintiff found that floors and joists were in an advanced state of dry rot, the damp course was not of good quality and the air brick ventilators were useless. Further, the roof was badly constructed, there was a crack in the brickwork, and the general condition of the bungalow was cheap and poor.

The defence was that at the time of the survey there were no apparent signs of dry rot, the damp course was of the usual type, and the air bricks appeared to be in order, but it was now known that the cause of the dry rot was that the sleeper walls were not honeycombed. That was a fact which could not be discovered without taking up floorboards, which was not possible as the vendor was then in occupation.

In giving judgment for the plaintiff on 24 February, the Lord Chief Justice said he was satisfied that there were indications in the house which should have warned a competent and careful surveyor of the possible presence of dry rot. That being so the surveyor should have arranged, or advised the plaintiff to arrange, for floorboards to be taken up and more thorough investigation made.

Judgment was entered for the plaintiff, with costs, for £229, for general repairs, £16 10s. for repairs to the roof, £40 for the period during which repairs were being effected, and £37 in respect of furniture removal and storage.

**Cunliffe v. Goodman.** This case concerned the interpretation of Section 18 (1) of the Landlord and Tenant Act, 1927, which provides that if premises are to be pulled down at the end of a lease the landlord can not make a claim for dilapidations.

The action was tried in the King's Bench Division on 16 November, when the Judge

held that if on the date the tenancy terminated the landlord had the intention of pulling down the premises he could not afterwards change his mind and recover damages for breach of covenant. Judgment was given for the defendant.

The plaintiff appealed and the case came before the Court of Appeal on 7 March, when the appeal was allowed.

The court said the question was whether the defendant, on whom the onus lay, had proved that the plaintiff, at the end of the tenancy, 'intended' to pull down the premises on the site. That was a question of fact. If the plaintiff did no more than entertain the idea of demolition, if she got no further than to contemplate it as a perhaps attractive possibility, then one would have to say either that there was no evidence of a positive 'intention' or that the word 'intention' was incapable, as a matter of construction, of applying to anything so tentative and so indefinite. An intention, the court thought, connoted a state of affairs which the party 'intending', who might be called 'X', did more than merely contemplate; and 'X' could not with any due regard to the English language be said to intend a result which was wholly beyond the control of his will. If there was a sufficiently formidable succession of fences to be surmounted before the result 'X' aimed at could be achieved, it might well be unmeaning to say that 'X' intended that result. In this case there were a number of such fences, and the plaintiff's project in connection with the premises did not move out of the zone of contemplation—out of the sphere of the tentative, the provisional, and the exploratory—into the valley of decision. The plaintiff never reached more than a provisional intention and it was impossible to conclude that the defendant had discharged the onus which rested on him of proving that before the end of the tenancy the plaintiff had decided to demolish the premises.

The appeal was allowed with costs, and leave to appeal to the House of Lords was refused.

**London County Freehold and Leasehold Properties Ltd. v. Wallis—Whiddett and others.** This was an action for breaches of covenant contained in a lease dated 26 July 1923, to keep and deliver up in good repair and condition a house at Putney. The action was tried in the King's Bench Division on 21 March.

The lease was determined on 24 June 1947, and the cost of complying with the repairing covenants was agreed at £1,500. The issue was whether the plaintiffs had suffered any injury to their reversion under the Landlord and Tenant Act, 1927, section 18. The defence was that notwithstanding that the premises were out of repair, the reversion had not suffered in value by reason of the breaches, as the L.C.C. had passed a resolution to make a compulsory purchase order in respect of the property. No order was made up to the time the lease terminated, but one was made some time afterwards and was confirmed by the Minister on 5 March 1948,

and the house had since been demolished. The purchase price was fixed at £14,000.

In giving judgment, his Lordship said that the law as it stood now was comprised in section 18, sub-section 1, of the Landlord and Tenant Act, 1927. It had been said, and he accepted it, that where the lessor was the freeholder, the injury to the saleable value furnished the best and proper test of the damages. It was said on behalf of the plaintiffs that the house was

in the market, and there being no compulsory purchase order at the date of the determination of the lease, it was quite immaterial whether the L.C.C. might become the purchasers. It was said on behalf of the defendants that the house was not in the market, and the L.C.C. could say: 'We are going to buy the house whether you like it or not.'

His Lordship said he was satisfied that the £14,000 was accepted by the plaintiffs because they had to sell to the L.C.C.

There were only two alternatives: (1) To accept the highest price, or (2) To go to arbitration; and the plaintiffs came to the conclusion that the arbitrator might not give more than £14,000.

His Lordship said that he had come to the conclusion that there were no damages beyond nominal damages, because there had been no diminution in the value of the reversion. Judgment was given for the defendants with costs.

## Review of Construction and Materials

*This section gives technical and general information. The following bodies deal with specialized branches of research and will willingly answer inquiries.*

*The Director, The Building Research Station, Garston, near Watford, Herts.*

*Telephone: Garston 2246.*

*The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.*

*Telephone: Princes Risborough 101.*

*The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1.*

*Telephone: Abbey 3333.*

*The Director, The Building Centre, 9 Conduit Street, W.1. Telephone: Mayfair 8641-46.*

*The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.*

*Telephone: Douglas 0372.*

**Guiding Lines.** Messrs. Henry Hope and Sons' steel door frames are well known and useful components in a building, but as they project beyond the face of the adjoining walling it has not been a simple matter for the bricklayer to line through his work between two or more door frames. Messrs. Hope have therefore produced a line guide device which gets over the difficulty. It is a bracket that can be thumb-screwed to the frame, and slots enable a line to be held in the correct position for setting-out the walling. The accompanying illustrations show the device and its application. As Messrs. Hope are prepared to supply these line guides to builders, free of charge, there should be a good demand for them, and one more step will be taken towards the erection of buildings by jigs, profiles and other devices for ensuring the perfect alignment of the several parts.

**Heating.** Much valuable information has been published on air changes, heat transmittance, and conductivity, but unless an architect's filing system is good it is not easy for him to put his hand quickly on what he wants. The Institution of Heating and Ventilating Engineers (75 Eaton Place, London, S.W.1) have published a revised edition of a useful handbook, under the title *The Computation of Heat Requirements for Buildings*, which gathers together

relevant data sufficient for ordinary purposes. Part 1 deals with temperature rise and rates of air change for heat loss calculations; Part 2, with heat transmittance coefficients, including heat loss calculations and table of coefficients for various building materials and forms of construction, with notes on intermittent heating; Part 3 gives conductivity data for the calculation of overall coefficients for composite walls, floors and roofs. Although not all architects are Senior Wranglers, with the aid of this 3s. book it should be possible for them to estimate how much heat loss there will be for a given form of construction, so that they can revise their drawings according to the contents of their client's purse.

**Table Fans.** In the usual metal-bladed table electric fan it is necessary to have a protecting guard to avoid injury to incautious fingers, and the result is not particularly pleasing. The governing reason for the guard is that the blades of the fan are metal, and it occurred to the General Electric Company that if they were made of some material that would not injure people the guard could be omitted and the whole design cleaned up. The result is their 8-in. V.1703 A.C. table fan, in which the blades are made of rubber, and are so designed that they are rigid enough to produce an air displacement of 600 cu. ft. a minute.

The totally-enclosed shaded pole induction motor runs at 2,100 r.p.m.

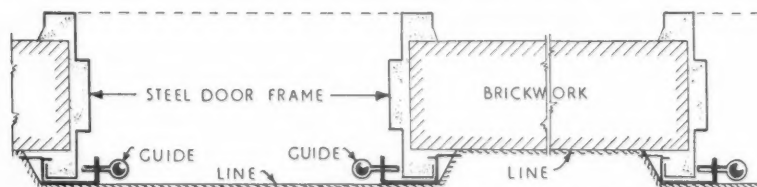
The new fan is finished in silver grey and has an on-and-off push button switch in front. It can also be used for wall mounting. The present price, including purchase tax, is £4 1s. 3d.

**Extruded Aluminium Sections.** In his lecture on *Light Alloys as Structural Materials*, published in this issue of the JOURNAL, Mr. Geoffrey Wood described the extrusion process for making aluminium alloy sections; they are now being used for so many purposes that it is easy to look on them as the solution of most detailing difficulties and to forget that some sections are not suitable for extrusion, as they will cause manufacturing difficulties of one sort or another.

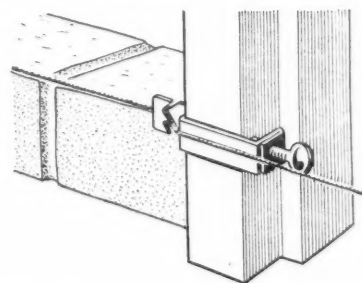
Those who want to use aluminium alloy extrusions would do well to get Information Bulletin No. 16 from the Aluminium Development Association (33 Grosvenor Street, London, W.1; price 1s.), as it describes the process in principle and then mentions certain factors in design which are of importance if the utmost efficiency in production is to be obtained. The bulletin is illustrated with a number of sections and their application.

Another bulletin, No. 2, deals with the properties of aluminium and its alloys, and has a useful appendix giving the average weights of plate, sheet and strip, round bar and wire, and tubes.

**The Agamatic Boiler.** A little while ago the Aga Heat Company Ltd. celebrated three things; their 21st birthday; the opening of their new showrooms at 20 North Audley Street, London, W.1—designed by Mrs. Darcy Braddell—and the advent of the new Agamatic boiler, designed for the supply of domestic hot water. This boiler, with its cream vitreous-enamel sides and black top, matches the Aga cooker in finish as well as in height and projection,



Messrs. Hope's guiding line device for use with steel door frames. Above: plan showing application of the device. Right: sketch showing the device fixed to steel door frame





so it can be placed beside the cooker or independently. The Agamatic has a mercury-operated thermostatic control with five settings, and is suitable for a domestic hot water storage capacity of 40-100 gallons, or 40 gallon storage and 100 sq. ft. of radiating surface, or 200 sq. ft. of radiating surface without domestic supply. The makers claim 70 per cent efficiency, so that with coke at 92s. per ton the cost per useful therm of heat works out at 5.85d.

The flow and return pipes can be connected either on the right or left side, and the flue outlet may be vertical or horizontal. If the boiler is fitted next to a cooker both can be connected to the same flue, but in this case the cooker branch flue must join the main flue above the branch flue from the boiler. The dimensions are: top plate, 2 ft. 3½ in. front to back and 1 ft. 9½ in. wide; height, 2 ft. 9½ in. The present price is £40.

**Repainting Old Surfaces.** After years of drabness it is pleasant to see the number of buildings that are now being repainted, although from the look of some of the woodwork it is difficult to believe that they were ever painted. But when painting surfaces that have been practically bare for some time there are certain considerations that should be borne in mind, and Messrs. Silvine Paints Ltd. have sent the JOURNAL some notes on the subject.

They point out that although the oil position for general paint supplies is now easier than it was during the war the paint manufacturer still has to conserve oil supplies to some degree, and so he uses comparatively short oil length varnishes or synthetics, in the minimum amount, to give a reasonably good quality product.

Old surfaces that have been exposed to the weather for some time become porous and absorbent, and act rather like a sponge, so that when the primer is applied the oil content is absorbed, leaving an underbound pigment on the surface. When the undercoat is put on the oil content is again absorbed in two ways; either by the original surface—if it is still capable of absorbing oil beyond what it has already taken up from the primer—or, secondly, by the underbound pigment of the primer. The subsequent gloss or flat finishing coat is affected in the same way as the previous coats.

The least of the troubles that may follow from this cumulative effect is a loss of gloss, which quickly leads to powdering, but this may be but the forerunner of more serious troubles, such as complete flaking from the original surface. To overcome this trouble Messrs. Silvine recommend that the first coat should be an oil primer or a primer on a long oil varnish. A test for such primers is to paint them on a non-absorbent surface, when they should dry to give an egg-shell or semi-gloss finish.

Repainting exposed brick and similar surfaces raises problems not normally met with on other kinds of surfaces. In these cases, especially where periodic painting had to be suspended during the war, the

weak places in the coating often break down completely and so give access to the weather; moisture enters the bare places, works its way along the wall, and attacks the coat nearest to the surface of the building, which is, of course, the oldest coat. An old surface may have had the cracks made good and the whole repainted and may still break down owing to the action on the first coat. The proper remedy is to strip the wall and start again, for the life of any surface coating is only as long as that of the first coat applied.

**National Building Studies. Bulletin No. 9.** 'Some common defects in brickwork', deals with six types of defect that often occur in brickwork; sulphate attack on mortar, and rendering; defects due to unsound materials; defects due to frost action; defects caused by the corrosion of iron and steel; defects due to the crystallization of salts; and defects due to shrinkage on drying. Each section is commendably arranged in the same order—descriptions, diagrams, causes, remedies, prevention; and an appendix gives some constructional details that should help in the avoidance of wet conditions.

The Bulletin is illustrated from clear and well-chosen photographs showing those cracks and defects that make the heart of an architect sink to his foundations, and as some of the photographs are of obviously recent buildings it is perhaps a slight reflection on our modern techniques and materials that the cover should contain an illustration of the central tower of St. Albans cathedral, with the caption 'Brickwork that has stood 1,000 years.'

The Bulletin is published by H.M.S.O., price 1s. 3d. net.

**Special Report No. 8.** 'An inquiry into domestic hot water supply in Great Britain. Part I. Distribution of water heating appliances and their use in winter'. This Special Report gives the results obtained from a social survey of 6,000 representative households, carried out for the Ministry of Works during the severe winter of 1947, and no one can read it with complacency, for in the urban districts surveyed 3 per cent had no piped supply of cold water at all, and in the rural districts 21 per cent were in the same case; 12 per cent of the total did not possess a bath, and of these 29 per cent were in the lowest wage group, earning not more than £3 a week. 15 per cent of households had no water heating appliances whatever, and 43 per cent had to rely on a copper, or kettles and pans for all their hot water. The document is priced at 1s.

**Special Report No. 9.** 'An inquiry into communal laundry facilities'. For the purpose of the Report the term 'communal laundry' is defined as those establishments, including public washhouses, provided by local authorities or housing associations to enable housewives to do personal and domestic washing outside their own homes.

The Report is illustrated with plans of communal laundries that have been erected in connection with housing estates

and blocks of flats, and various recommendations are given. The price of the Report is 1s.

**Special Report No. 10.** 'New methods of house construction. Second Report'. This Report is a supplement to Special Report No. 4, 'New methods of house construction', which described an inquiry into nine non-traditional systems. The present Report deals with four more systems, developed mainly during 1947-48, and are referred to as types 10, 11, 12, and 13. In addition type 14 is a slightly modified form of type 4 in the No. 4 Report.

Type 10 is of steel construction with external cladding of precast concrete panels; internal lining of wood-wool, plastered.

Type 11; steel frame but with external walling of prefabricated panels two storeys high. Panels timber framed, covered partly with aluminium sheeting and partly with rendering on steel mesh. Plasterboard inner lining.

Type 12; No-fines concrete cast in situ, rendered and plastered.

Type 13; walls of storey-height precast hollow concrete panels. External finish, and internal lining of fibreboard, applied in factory. Reinforced vertical and horizontal joints formed in situ.

The purpose of the investigations was to find out if economy in man-power and scarce materials could be reached by using new methods of house construction, and what would be the effect on cost.

The Report makes special mention of the results obtained from type 13, but it is pointed out that in this case a bonus scheme was in operation, and it was not possible to discount the effects of this, although it is thought that the number of man-hours would be significantly less than those for other types even if the bonus scheme were assumed to reduce the number of site man-hours by as much as 30 per cent.

With the exception of type 13, none of the types is as yet cheaper in prime costs than the traditional brick house, which is put at £1,015; type 10 being £1,080-£1,110; type 11, £1,030; type 12, £1,105-£1,190; and type 14, £1,035-£1,140. Type 13 had a prime cost of £1,015-£1,110, but then the houses built to that type were 10 per cent larger than the other types.

The Report emphasizes that the best results in the additional types studied were obtained when a good system was supported by an organization conceived entirely for the requirements of the new system, where design, production and erection were integrated in one organization which ensured the correct phasing of factory and site processes. The cost of the Report is 9d.

**Codes of Practice.** C.P.114-100-114-105 (1950) has been published, under the title *Suspended concrete floors and roofs (including stairs)*. The contents include methods of calculating the effect of concentrated loads, and the bending moments in floor panels, and also recommended aggregates for concrete. Price 6s., post free.

# Book Reviews

**Dublin.** A study in environment, by John [H.] Harvey. 8½ in. xii + 116 pp. + pls. text illus. Batsford. 1949. 15s.

John Harvey is an Englishman who has known Ireland since childhood. His enthusiasm for Dublin, which carries one buoyantly through the hundred odd pages of this book, is usually infectious and only rarely provoking in the way exceptional enthusiasms are so apt to become. Certainly, Dubliners will raise an eyebrow at reading: '... the exuberance of Dublin—the rich and coloured traces of a southern, catholic, baroque past, that England never knew.' But despite this and other panegyrics Harvey gives us a most readable and scholarly account of the history, geology, topography and climate, the planning and architecture of the city, of the factors in the shaping of Dublin which he summarizes under one heading—environment. Sometimes one hopes that his praise will stir undeserving Dubliners into long-delayed activity, as when he writes: 'Long ago, Dublin led the way in enthusiastic recognition of Handel's *Messiah*, when the composer had been frozen out of England by the patronage cliquery of the time.' For how many Dubliners are aware that the *Messiah* was performed in a Fishamble Street Music Hall, long since vanished, which was first of its kind in these islands? And how many are concerned about the fact that Dublin is one of the few important cities in Western Europe which today has no public concert-hall suitable for orchestral music.

Harvey organizes his study of the city's environment under five main headings: (i) Towards Dublin (the spiritual and historical background); (ii) Dublin Now (the present characteristics of the city's life and culture); (iii) View of Dublin (the city's architecture); (iv) Surroundings of Dublin, and (v) Growth of Dublin. These add up to the best contemporary account of the Irish Capital, so far published; a picture enlivened by the stranger's discerning eye. The book is well-produced, in the characteristic Batsford format, with a coloured frontispiece and 161 half-tone illustrations. These and a detailed index make it a valuable reference book.

RAYMOND McGRATH [F]

**Cities in Evolution**, by Patrick Geddes. Edited by the Outlook Tower Association and the Association for Planning and Regional Reconstruction. [Jacqueline Tyrwhitt, ed.] 8½ in. xxxi + 241 pp. text illus. Williamsons and Norgate. 1949. 18s.

If any single book can be regarded as the source of the contemporary attitude to physical planning, it is this. A reprint has long been overdue, and it now appears in a new edition, with all ephemera neatly pruned away and illustrated by an excerpt from Geddes' pioneer *Cities Exhibition*. In a new generation of planners the book will probably arouse mixed feelings: nostalgia for an intellectual climate in which it was still possible to believe that 'the neotechnic order' was going to benefit the

human race, impatience with Geddes' way of writing, which is exceptionally hard on the reader, but above all astonishment at his imaginative apprehension of facts. Facts—the facts of history, geology, botany, building—seem to have been perpetually on the move in his mind, forming one kaleidoscopic pattern after another. He was a master of the inductive method, whose discoveries he sets down in a strange language of his own, part Greek, part Anglo-Saxon (neither in thought nor in expression does he show the slightest Latinity). To have missed his lectures, one feels, must have been to have missed the essential Geddes. The last of them, which is given in this book, has curious affinities with the lectures which Frank Lloyd Wright gave at the R.I.B.A. just before the war; in fact, what with Wright, Mumford, Lilienthal and the regionalists, America can claim to have understood and applied the Geddes touch in a way never approached in his native island, where his ideas are still utterly unfamiliar to many of those who have the power to implement them. Geddes addressed himself primarily to the citizen rather than to the official, and it is the civic societies, most of which are still mainly antiquarian in outlook, who need to study this timely new edition.

LIONEL BRETT [A]

**Structural Economy for the Architect and Builder**, by George Fairweather. (Architect and Building News.) 13½ in. 178 pp. incl. pls. text illus. Gilbert Wood. 1949. £1 1s.

Mr. Fairweather keeps a doughty stable of hobby horses, which he rides with skill, determination and a deal of success on every occasion. They are undeniably good horses which anyone following this sort of activity can not afford to ignore. His book is, in fact, an assessment of present-day forms of building construction which are criticized against present-day requirements, with suggestions for improvement.

It should be most useful to architects in practice whose noses are so close to the grindstone that they do not see and can not judge their method of grinding, for students whose text books are comprehensive but seldom critical, and most particularly for technical lecturers who have based their lectures on a craft approach, and for whom a change-over to a critical scientific basis is a prodigious task, unless they have help from a book such as this.

There are many forms of construction that are not considered here, and many statements which appear obvious are inevitable in a thorough analysis such as this, but the clear explanation of how these parts of buildings work and the detailed suggestions which Mr. Fairweather makes are very sound and very valuable.

The book is full of excellent diagrams with comments on each. They are based on details published by the ARCHITECT AND BUILDING NEWS over many years, and it would seem that the answer to the cost problem in technical book publication might be found here. The great difficulty of serial publication with republication in

book form later is to ensure unity—to avoid sacrificing the whole for the sake of making interesting parts. Mr. Fairweather's customary thoroughness and the nature of the subject avoid this.

In one respect the author is no better than most writers of semi-scientific works, and that is in the style of his writing. It is tedious to read, and only a realization of the value of the matter keeps one plodding on. This kind of book can not perhaps be written in simple English, but someone should try.

DENZIL NIELD [A]

**On Trust for the Nation—II**, by Clough Williams-Ellis. (National Trust.) 9½ in. 165 pp. text illus. Paul Elek. 1949. £1 1s.

It is well that the public should be reminded continuously of the very great service which the National Trust is rendering to the community, and this book by Mr. Clough Williams-Ellis, like the one that preceded it, will help to make known the wide variety of properties that have been removed from danger by this beneficent body. There is, however, a risk that the salvage of these things, the attractions of which are a tempting subject to any writer, may divert the reader's attention from the disease in the body politic for which the Trust is a welcome but only partial remedy. The first half of the present century has witnessed, surely to an unprecedented extent, the destruction and mutilation of our English architecture and craftsmanship. Not by any means is this chiefly due to the two wars, for the increasing loss comes from the disabling of those who loved to build and cherish beautiful houses and their replacement by indifferent commercialism and ignorant officialdom amongst which cultural values are unknown. And the public conscience is lulled to sleep by the excellent intentions of recent Planning Acts which are but a façade behind which destruction proceeds almost at will. At the same time houses and churches of distinction throughout the land are wasting through lack of means to maintain them.

This is the background against which the heroic efforts of the National Trust show up in effective relief. We can not be too grateful for this noble enterprise and for the wise policy which seeks to enable families to remain as tenants of their homes or, where this can not be, to assign the buildings to a practical use. For however great as examples or repositories of art the possessions of the Trust may be, we could never view with equanimity an array of empty shells or devalitized museums, standing as an eternal but ineffectual reproach to an age in which their significance was entirely lost.

Mr. Clough Williams-Ellis discourses pleasantly on the many famous themes provided for him and introduces the appropriate bits of local colour. The dust-cover with its cherubs from the Petworth carvings is most attractive, but the production of the book falls much below the standard of its superlative subject. The hard surface of the white process paper is not friendly to the otherwise excellent photographs, nor does

the type make a gracious page. The final vindication of the great work of the National Trust will be, as all its supporters hope, a revival of a high standard in all the arts and a survival of only the best in modern modes.

W. H. GODFREY [F]

**Dudley (Worce.).** As it was and as it is today, by G. Chandler and I. C. Hannah. 8½ in. vii + 208 pp. + pls. Batsford. 1949. £1 1s.

If you are going to live in Dudley, and if you are the sort of person who takes an intelligent interest in the place where you live, then you will be well advised to go through this new Batsford book.

I purposely use the words 'go through' instead of 'read', because the book is part reference and part story, and is not one with which you can settle down for an enjoyable evening's reading.

But it is comprehensive, and many will find the book a useful source of reference, which will tell them where to find everything of local interest from the 300 million-year-old fossils of bivalve molluscs housed in the town collection (rest their souls), to the political and economic history of Dudley, and to such things as old posters and handbills. These are interesting in both layout and content, and are, of course, beautifully reproduced, as Batsford's illustrations always have been.

A number of chapters, however, comprise only records and dates; and Chapter 9 on 'Industrial Records' consists of nine pages of notes on the industrial history of the district from 1086 to 1948. Chapter 8, too, is almost entirely devoted to being a catalogue of Dudley trades, past and present, and one so detailed that the reader may even discover that 'The manufacture of bedding is also carried out by Flanagan and Sons, Ltd. They make Hush-a-Bye Spring interior mattresses and Easibed bedding.'

The authors' style does not always make for easy and pleasant reading; sometimes there is an apparent over-anxiety to avoid being inaccurate, and so to overstress irrelevances. But, despite a few shortcomings, the book will be a useful textbook for those who know, or need to know, Dudley.

A. DOUGLAS JONES [F]

**København fra Bispetid til Borgertid &c. Copenhagen: Stadsingeniørens Direktorat.** 2nd ed. 12½ in. by 9½. (ii) + iv + 304 + (viii) pp. text illus. Copenhagen: Schultz. 1949.

'Copenhagen from the Bishops' Time until the Period of the Citizens' Council' was first published by the office of the City Engineer in 1947. Additional material has been included in this second edition. It is an historical account of the development of Copenhagen from its origin as a small fishing port, near which Bishop Absalon built his castle in 1167, until the enactment of the 1939 Building Act which, for the first time, gave the city authorities wide town-planning powers. The history is very fully illustrated with maps and plans, some specially drawn and others reproduced from old documents, together with engravings and

photographs of buildings, many of great interest. The work is well documented and each chapter is introduced by a short summary in English.

As with most continental towns, Copenhagen was, until the middle of the 19th century, a fortified city; the layout of its fortifications and their subsequent modernization as military science progressed was a principal factor in the city's development. Building was confined to the limited area within the walls, and the city could therefore only expand by building higher and more densely, or by reclaiming parts of the harbour. It was natural that, under such congested conditions, extensive sections of the town would periodically be gutted by fire. Their reconstruction and the subsequent revision of building codes is fully described. A chapter is devoted to the historical development of town planning legislation from the Municipal Building Act of 1254 until the 1939 Act, and the effect of building legislation on the layout of residential quarters, mostly developed with blocks of flats, is studied in detail.

G. ANTHONY ATKINSON [A]

**Decorative Art. The Studio Year Book, 1949,** by Rathbone Holme and Kathleen M. Frost, eds. 11½ in. by 8½ in. 130 pp. text illus. Studio Pubs. [1949.] £1 5s.

The Studio Year Book is now back into its pre-war stride, and the volume for 1949 presents a comprehensive summary of interior decoration, furniture and the domestic arts in Europe and U.S.A. For those who keep up with the fashionable architectural journals a survey of this kind contains few surprises, but it is nevertheless valuable to have the year's work collected and instructive to see the work of different countries in juxtaposition.

With the exception of a long and interesting introduction by R. W. Symonds, the Year Book consists entirely of photographs, mostly of a high standard, arranged in sections under such headings as 'New Houses and Apartments', 'Interiors', 'Furniture', 'Ceramics', 'Tableware'. Within each section, samples from several countries are loosely grouped. The British contribution is small in nearly all sections and is clearly limited by austerity; the Year Book inevitably reflects the current tastes of the well-to-do, who still exist, however deplorably, in some other countries but, if they exist here, are no longer encouraged to indulge in costly interior decorating.

In the sections on 'New Houses and Apartments' and 'Interiors' national characteristics are much as one would expect. The American examples are heavily luxurious, with the perfection of expensive film sets; the French (chiefly examples by Jean Royère) astonishingly accomplished; the Scandinavian crisp and elegant; the British rather mixed. In the section of 'Furniture' the vigorous, experimental work of the Italians is outstanding. Their work has a flowing, sculptural quality entirely opposed to the static, rectangular forms of contemporary furniture in other countries. The fact that it is also unpractical and extravagant makes it not less stimulating, but em-

phasizes the homelier virtues of Swedish, Danish and Swiss examples. Of the English pieces the now well-known work of Ernest Race is outstanding; the other examples are mostly not of international class.

The sections on 'Ceramics' and 'Tableware' show pleasant, accomplished work mostly from Scandinavian factories, including pieces with remarkable purity of line from the Arabia Porcelain and Earthenware Factory, Finland. The 'Glass' section contains examples of engraved vases and decanters which suggest that the fine Orrefors tradition is deteriorating. The section on 'Metalware' consists mostly of silversmiths' work, which is, as always, disappointing in design. The firm of Georg Jensen maintains a high standard, but the British examples, nearly all from technical schools, are commonplace.

It is difficult to do justice to furnishing fabrics in photographs, but from the 'Textile' section it is clear that 1949 was not a vintage year. In this department we are far from reaching the extremely high standard of the few years preceding the war.

The introduction by R. W. Symonds summarizes the developments in domestic architecture and the changes of taste in decoration and furniture from the first issue of the Year Book in 1906 to the present time. From this summary, the importance of Fashion in determining the changing appearance of the English house, inside and out, emerges very clearly. Architectural teaching and current design propaganda places the emphasis so firmly on the analytical, rational, approach to design that architects and designers rarely see how strongly they are influenced by the highly irrational impulses of Fashion. This is not explicit in R. W. Symonds' introduction, which is in the main a factual survey, but designers who feel that design is based on immutable principles are invited to consider the range of examples given.

DAVID BOOTH [F]

**The Building Encyclopedia,** general editor S. G. Blaxland Stubbs. 3rd ed. 4 vols. 10½ in. Waverley Book Co. 1949. £7.

It is essential to remember that this is not an architectural text book—otherwise the sensitive eye may be offended by some of the illustrations. Those architects who have contributed have done so solely on the condition that they were writing and advising for the working builder. Revised, enlarged and extended, the third edition has become a truly encyclopaedic work. Sixty-seven people, expert in various branches of building knowledge and craftsmanship, have taken part in its preparation. Including plates and charts there are no less than 3,700 illustrations—a vast, useful, imposing achievement.

J. C. P.

**Wie wohnen? Homes and Housing, etc.,** by Ernst Zietzschmann and Gertrud David. Text in German, English and French. 10 in. × 7½ in. 292 pp. text illus. Erlenbach-Zürich: Verlag für Architektur. [1949].

This is one of those compendious Swiss books, pleasant to the eye and hand, which



assemble examples of buildings of the same genus from different sources and present them clearly to the international reader with plans, photographs and terse descriptions in three languages. A comparable book from the same publishers dealt with *Week-end and Country Houses* [1947]. That was concerned solely with privately built houses; this includes both the publicly sponsored flat or housing scheme and the privately built flat block or individual house. After an intelligent general introduction the contents cover Flats (64 pages), Housing schemes (25 pages), Individual houses (130 pages) and Prefabricated houses (20 pages). There is a total of 115 examples, with one-third from Switzerland, one-third from Scandinavia and one-third from the rest of the world.

In the House section the bias is even more towards Switzerland, and many of the examples are not likely to appeal to a wider public than a Swiss one—indeed, those from our own country leave much to be desired and have that rather uninspired correctness which characterises so much Swiss domestic architecture. One wonders whether the editors are completely unaware of the number of good small houses built in England in the five years or so before the war and since. The conservative choice of specimens in this section makes it a little dull, but there is a justification for this in the foreword which states the book to be 'purely and simply a collection of good buildings... chosen solely according to whether they were soundly built, materials well used and a good formal solution found'—a laudable object, but these qualities should not preclude those of imagination in planning and design, and other criteria besides those of comfortable unpretentious domesticity.

The strength of the book is in the flats and housing section, which contains a balanced selection of examples that are interesting to study and compare. Here the architectural language, as is to be expected with an untraditional building type, is much less limited and there are a number of old favourites of the illustrator of modern architecture, as well as such recent developments as the Swedish 'star houses' and 'point houses'. The latter—stumpy blocks which soar their safe ten storeys—seem a missed opportunity for a real architectural adventure on one of the most dramatic sites of Stockholm. These flat blocks, as most of the others shown, are of that innocuous architecture which is pleasant in so many circumstances, but such prominent occasions surely require a more powerful architectural statement.

The book half covers both aspects, housing and houses, and it is a pity that the first part has not been treated as a separate work when it would have had even greater value as a really international folio of flats and housing. As it is though, it is well conceived, beautifully produced, and should be a great stimulus to all concerned with this vital branch of architecture which so easily becomes stereotyped and unimaginative. It should be in all public libraries and studied by everyone who has anything to

do with a housing committee, in the hope of dispelling the statistical illusion that housing is only the speedy provision of dwelling units. TREVOR DANNATT [4]

**Building for Modern Man. A Symposium.** [Princeton Bicentennial Celebration Conference.] Thomas H. Creighton, ed. 8½ in. xv + 219 pp. Princeton: U.P.; London: O.U.P. 1949. £1 6s. 10d.

For those who like their architectural theory hot, strong and unsweetened this book is to be commended. In 1947 some sixty modern architects engaged in a two-day conference at Princeton University. Thomas H. Creighton, Editor of *PROGRESSIVE ARCHITECTURE*, took the mass of reported verbiage, and by means of skilled editorial pruning, plus some explanatory interpolations of his own, turned it into this book.

The conference appears to have discussed everything to do with architecture that one can think of. Here are some titles of contributed talks: 'Social and Visual Units', 'The Democratic Spirit in Architecture', 'Professional Limitations and Possibilities', 'The Need for Research', 'The Effect of Finance on Design', 'Administrative Limitations', 'Concepts of Space and Form', 'Architectural Values', 'Aesthetic Values', 'The Need for a Structural Vocabulary', 'Three Dimensional Planning', 'Democratic Planning', 'Historical Values: The Forgotten Criterion', 'Industrialization: Servant or Master?' 'Space, Time and People'.

These titles, some of which are rather high-flown, do not give an entirely just picture of the papers and discussions, most of which make excellent reading. Only a few consist of accepted truisms, platitudes almost, wrapped in reams of abstract nouns. Others throw into relief the difference between the American scene and our own by demanding developments long accepted here; for example, it is a little odd to British eyes to read Professor Gropius pleading for Government technical research into housing. Someone ought to send him the Housing Manual, specially Part II (technical), when it appears. B.R.S. and the Ministry of Works could also contribute not a little. In general, however, the majority of the papers present much progressive thought, including, of course, the remainder of Professor Gropius's contributions.

The conference speakers included all the big names in American modern architecture: Richard Neutra, Joseph Hudnut, Siegfried Giedion, Robert Moses, Ernest J. Kump and, of course, Frank Lloyd Wright. He (F.L.W.) characteristically attended the last session only and, equally characteristically, dragged an enormous red herring across a discussion on education by—to quote Mr. Creighton—'explaining gratuitously the difference between the Oriental mind and the Occidental mind'. Nevertheless, a thoroughly good time appears to have been had by all. If you enjoy a good wallow in architectural theory you will like this book; if not, not.

E. L. B.

**Art and Science. A study of Alberti, Piero della Francesca and Giorgione, by Adrian Stokes.** 8½ in. 77 pp. + 24 pls. Faber and Faber. 1949. 15s.

Despite the general and comprehensive suggestion of the title, this new work by Mr. Stokes seeks to define the qualities that resulted in the work of three artists of the end of the 15th century from the impact of science in a limited definition of perspective and applied mathematics. The limitation of the field of research is precisely the virtue of Mr. Stokes's writings. He deals in complex and acute responses to particular works of art that he enjoys, and thereby makes his contribution to the understanding of works of art instead of to the tangle of unattached theorizing that frequently passes as aesthetics.

To Alberti and Piero mathematical exactitude was not an acquisition of simple practical value in solving some technical problem. There was, Mr. Stokes points out, a sensuous inspiration in such studies; 'accurate disposition in space... possessed a tangible, as if new found, order as well as an extraordinary loftiness'. At last, again, the nearby world could be explored by 'a steady, untroubled adult regard, the most tremendous triumph of man, provoking our science no less than our art'. Rarely in history can the man of science and the artist so eagerly have responded to each other's discoveries, so urgently have demanded each other's collaboration—so often been the same man—as in the early renaissance attempt to understand, measure and rule the universe and enjoy it at the same time.

In the work of Mr. Stokes's chosen artists this collaboration achieved a coincidence of form and content which brought painting as near the condition of music as might be. And yet, as he is careful to emphasize, the qualities that ensure that condition are essentially those to which music offers no parallel. 'Simultaneity of space—as contrasted with rhythm, movement, contrast and other non-simultaneous sensations common to both arts' or 'the contribution from significant colour to the conception of form': such are the attributes Mr. Stokes attempts to isolate. These are aspects of visual art as unliterary as they are unmusical, the least likely to engage or to appeal to the men of letters who naturally produce the literature of art criticism, thus the most neglected. As a painter, Mr. Stokes is at home with them and has always had something to say about them, as readers of his previous books will know, though his manner of saying it, evocative and often revealing, is at times a little artfully overwrought.

WILLIAM TOWNSEND

**Die Bauschreinerei. Türen und Tore, by Fritz Spannagel.** Reprint. 11½ in. by 8½ in. viii + 502 pp. text illus. Ravensburg: Otto Maier. 1940 (1949). DM 65.

This monumental work with well over a thousand scale drawings and photographs covers only the design and making of internal doors. External doors are the subject of another volume to come. It is a book

that treats every aspect of every conceivable type of internal doors—flush doors, panel doors, sliding doors, noise-proof doors, cold storage doors; it deals with the design and manufacture, by mass production or individual craftsmanship, of door furniture, mouldings, framing, building-in. But design remains an overriding consideration in the most specialized technical field. The book is inscribed to Heinrich Tessenow, whose delicate details and sensitive craftsmanship have inspired several generations of German architects. To know that Fritz Spannagel is a friend of Tessenow can not fail to give us confidence that even in more than a thousand drawings there will be no grave errors of taste that mar so many building construction books.

For anyone connected with the manufacture of doors or their standardization, or with the manufacture or specification of door hinges, locks, furniture or sliding door gear, or for the student and the fortunate few architects designing their own details, there is a mine of information in this work. Here, moreover, is a field in which, despite a halt in the progress of technical building development in the last eight or ten years, the German manufacturer still leads.

There is one possible trap for the copyist who does not know German. There are numerous 'do's and don'ts' in the drawings, and without reading the text it is not always easy to see which is the right and the wrong way—not without expending some thought, anyhow.

GERHARD ROSENBERG [A]

**Designers in Britain.** Vol. 2. A biennial review, &c. *Peter Ray*, ed. (Society of Industrial Artists.) 12 in. by 9½ in. 247 pp. text illus. Allan Wingate. 1949. £2 5s.

This volume is the second of a biennial series. It contains 900 illustrations from some 400 designers, not necessarily members of the S.I.A., and is arranged in two parts; design for industry and design for marketing and publishing. For each part there was a separate selection committee of S.I.A. members. Much credit is due to Mr. Peter Ray, the editor, for the excellently designed layout.

*Designers in Britain 2* sets out 'to be, not a review of design in general, but a record of individual designers', and to be part of a series that 'should build up into a most valuable history in which the artist and the industrialist alike will be able to trace the threads of evolution, the growths,' etc. of industrial and commercial art. With the 1947 volume and this one open in front of me, I attempted to reconcile these two approaches, but found that in some sections it was difficult and in others impossible. In radio cabinets the design standard is high, but not higher than that in 1947. In furniture and lighting there has been considerable evolution and growth. Furniture is developing an idiom, in wood at any rate, while lighting has less functional severity. Ceramics, too, show improvements. The large section on printed and woven textiles illustrates a more consistent vitality, but leather, which seems full of promise, can scarcely be compared

with the unrepresentative showing for 1947. In glass, silver-plate, wallpaper and carpets, there is the same lack of correspondence between the two years. These industries may be weak in design, but one feels that they could put up a better show than this. The work of individual designers is self-evident, but it is impossible 'to trace the threads of evolution', etc., when for 1949 there are but five photos of glass, three of silver-plate, three of wallpaper, and one photo of a carpet.

In the second part, which is twice the length of the first, the various media for commercial art have a much better representation. The exhibition and display designs, when compared with 1947, show that a strong tradition, remarkable alike for its consistency and variety, has taken firm root in this country. It encourages the industrialist to hope that his products will be shown to the best advantage and augurs well for the Festival of Britain. There are further sections on packaging, posters and book jackets, as well as many other branches of commercial art. Finally, there is a somewhat meagre selection of students' work, and with one exception none by students of provincial art schools.

In 1951 another volume will be added to the series. If it is as good as this one, there will be no cause for concern, but it could be better.

MICHAEL FARR

**Norfolk Churches,** by *H. Munro Cautley*. 9 in. xiii + 272 pp. incl. (110) pls. + folding flap + front. text illus. Ipswich: Norman Adlard. 1949. £2 2s.

There are in the British Isles no two other counties whose association is so closely bound up with their parish churches as Norfolk and Suffolk.

When Mr. Munro Cautley published *Suffolk churches and their treasures* he wrote wistfully that one day someone must do for Norfolk what he had done for Suffolk: but he had set a very high standard, and now, in his 74th year, he has himself fulfilled the need, in a volume which is in every way a worthy companion to that splendid work on a splendid subject.

The two books are complementary to each other, as the parish church architecture is complementary. The border between the two counties unnaturally divides a stretch of country rich in similar buildings, and the great Suffolk churches of Mildenhall and Lakenheath link up with the old river churches—Upwell and Outwell and Lynn and the superb Wigganhall Churches, St. Mary and St. Germaine, across to the Marshland churches that otherwise might seem an isolated group.

In the east of the county Norwich with its 33 churches in a square mile is only the centre of another rich concentration.

Each book starts with a series of general notes—Round Towers, Towers, Entrances, Sanctus Bell Towers, etc. The Norfolk book adds to the subjects dealt with under Suffolk, treated with excellent knowledge and width: though certain subjects such as bells and brasses are omitted because they have been so well described elsewhere, the author's special affection for hatchments of

Royal Arms receives due attention. Those notes are followed by an admirable series of photographs, practically all taken by himself. Then comes the body of the book—notes on all the churches in alphabetical order, taken from his own notebooks, patiently compiled on visits over forty-five years. (Norfolk has a charming dedication—to his dear wife and constant companion in these visits, who 'must, in the number of churches she has seen, hold a record for her sex'.) Shortage of petrol indeed has made recent visits to some churches impossible (for instance there is no mention of the disastrous collapse of the noble tower and spire of Oxborough Church).

Two innovations on the Suffolk book are admirable and it is much to be hoped that the promised new edition of that book will have these features. Each church in the list is given a quick map reference to the key map at the end; and for the sake of 'strangers with limited time' he states, 'I have ventured to show by asterisks my personal preference in the churches of Norfolk'. In this, and again and again in the notes it is the personal opinion, the experienced architect's judgment of design, which is so valuable and makes the book so different from a mere guide.

H. C. HUGHES [F]

**European Architecture in the Twentieth Century,** by *Arnold Whittick*. Volume i. [To 1924.] (Incorporated Association of Architects and Surveyors.) 9½ in. xx + 249 pp. + front. + lxxvii pls. Crosby Lockwood. 1950. £1 10s.

The first volume of a history of European architecture in the 20th century should be an important architectural event; only two shorter studies even approaching the scope of this book have been written in the English language. The definitive history of the first half of the century is, therefore, a task not to be undertaken lightly and should acknowledge the lack of perspective from which a historian of contemporary events must inevitably suffer.

It would be unjust to accuse Mr. Whittick of being lighthearted. He assembles a mass of fact—not always highly relevant fact—in 250 pages of text and 77 pages of illustration, in what is undoubtedly a very comprehensive survey, but which, as literature, remains a somewhat uninspiring account.

As a generalization, one may say there are two ways of writing history. The verbal chart concerned with the facts of a period, or an interpretation of these facts guided by the author's philosophy and personal vision. A third, and rarer approach is possible, in the combination of both these aspects in a single vision, and though the results of such a personal interpretation must always be controversial, they will be stimulating and ultimately deepen our historical understanding. History written without this personal and literary quality makes its creators rather dull dogs, and its achievements rather tedious. It is unfortunate that Mr. Whittick's book leaves one with this sense of frustration.

The first volume gives a historical back-

ground of the period and studies the early years of the century up till 1924. The second volume proposes to cover the years 1924-33, and the third 1933-50. In this immense amount of material one misses the conviction which would create a more continuous theme and, as a result, it is sometimes difficult to follow Mr. Whittick's argument and to see the interrelation of the many subjects that he discusses.

The twenty lines devoted to Mackintosh, and the single reference to van der Rohe as a student of Behrens, are examples of a seeming lack of balance in the presentation of the material, which could at least have been explained by some justification of his attitude. Van der Rohe's glass skyscraper projects, and his earliest interpenetrating plans for houses were prepared in the years 1919-24.

While it may be regretted that this is not a major work of the quality found in Pevsner and Giedion, it would be churlish to deny that so ambitious a project will, to some extent, fill a need of the architectural student, even though it may prove hard going for the less specialized reader. If the illustrations in the future volumes could be arranged with some sense of typographical lay-out, and not as pages from a scrap book, it would do much to make the work more attractive to the eye.

L. D.

**Planning Your Home for Tomorrow**, by *Morrison Hendry*. 8½ in. 218 pp. incl. pls. text illus. Faber and Faber. 1950. 18s.

Mr. Hendry attempts the difficult task of explaining to laymen what is involved in planning and building private houses, and his book can be given a qualified welcome.

If such works are not so comprehensive as to be rather heavy going, they are liable to be superficial and open to misunderstanding. The present volume steers a middle course, but even so requires a good deal of clarification. It is, for instance, implied that houses can be built on isolated sites 'away from large villages', and that the low cost of rural land should make this possible; planning control is thus rather ignored, though 'zoning' is mentioned as being a safeguard against unsightly neighbours. Recent social trends tend to be missed, and there are references to 'servants' quarters' and maids' rooms in small houses; the 'servant problem' might indeed have been more nostalgically treated; for 'where are the snows of yester year'—the resident or even daily maids? Only summary accounts are given of the methods of taking over roads and charging frontagers with the cost and of Local Authorities' powers under the Small Dwellings Acquisition Act to make loans for house-building. The kind of plot plan which provides for 26 ft.-30 ft. frontages is accepted uncritically, and though the 'direct method'—as Mr. Hendry calls it—of building a house to plans found in a periodical and without the help of an architect, is condemned on grounds of added costs and faulty design, it is not pointed out that planning requirements would be most difficult to meet by this 'method', which must be the reverse of 'direct'. An

error on page 59 regarding reduced Quantity Surveyor's fees for individual houses is liable to lead to disappointment when his charges are submitted for the usual 2½ per cent.

The writing is not always felicitous, an instance of this being Mr. Hendry's reference to an elevational treatment for the benefit of a client who requires a 'very modern external appearance'.

These and other jarring notes notwithstanding, the client who has read the book will be the better equipped to instruct his architect, and that after all is its justification.

The sections dealing with the architect's role and his charges are well done. Mr. Hendry makes a good point in telling the client that 'while designing your house, the architect must live your life'.

The illustrations are mainly the author's sketches of his own and other architects' designs, and the actual plans are clear and not too 'slick' for the purpose. A number of sketch plans of room arrangements and 'plans for criticism' should be particularly helpful. The same can not be said of the elevations, which attempt to show too much and yet, being without cast shadows, will probably mean little to the layman for whom they are intended.

The idea behind the book is a good one, and it is hoped that if it reaches a second edition Mr. Hendry will take the opportunity of rewriting some sections to bring them more into line with current needs.

PAUL MAUGER [F]

**Outline Plan for the Portsmouth District**. Final Report, by *Max Lock*, in collaboration with . . . others. 13 in. xi + 159 pp. incl. pls. and maps. Winchester: Hampshire County Council. 1949.

This Report has been commissioned by the Hampshire County Council and the Portsmouth City Council at the instigation of the Minister of Town and Country Planning, who wishes to obtain an independent opinion to assist him in the settlement of a dispute between the two authorities.

During the War the Portsmouth City Council purchased an estate at Leigh Park, which is a few miles outside the city's boundary, on which they proposed to construct a town having a population of 22,000. The land was purchased under the Satellite Town clause of the Town and Country Planning Act, 1932. When the 1947 Act became law, planning powers passed to the Hampshire County Council, who objected to the site of the new town. In the meantime, work was proceeding rapidly on a thousand houses.

The Max Lock Planning Group, in its terms of reference, was asked to advise on 'the population which on proper planning standards can be accommodated in the main built-up portions of the planning area, the number of persons who must in consequence be accommodated elsewhere, and the location of industry and new development required.'

The Report gives a detailed analysis with many tables of statistics of the population structure and growth, housing conditions

and requirements, transport facilities and industry. The conclusion deduced from this material is that the Hampshire County Council is correct and the solution to Portsmouth's housing problem is not a new town but the extension of Gosport, Fareham, and Havant.

The production of the Report has obviously been carried out with a strict eye to economy, but it is simple, straightforward, and is illustrated by a number of clearly drawn plans.

T. L. MARSHALL [A]

**Notes on the Medieval Monasteries and Minsters of England and Wales**, by *H. Ernest Roberts*. 8½ in. xii + 160 pp. + pls. + text plan. S.P.C.K. 1949. 12s. 6d. This book is a veritable revelation. It shows the astonishing wealth of remaining monastic and collegiate churches, and puts the information on these in a more systematic form than has ever been done before; yet the whole is clear to a layman. The title is explicit—'monasteries' is the comprehensive term, not the misleading 'abbey', and 'minsters' are here shown to be collegiate churches (i.e. of secular canons), whether cathedral or other. The general scheme of the body of the work is first by countries, then by monastic orders, then by places alphabetically, each building, in its present form, being briefly described, where necessary with chief periods represented and dimensions of the church. Then there is a list immediately following, first by monastic orders, then all places in the country in one alphabet; this, incidentally, reveals no less than twelve Gilbertine canons' houses and 40 friaries. London gets its due share. There is also a list, at the very end (Appendix XII), of 'other places', where 'nothing now remains' or only 'vestiges'; these two lists are confusing, and more explicit recto head-lines would help; in a future edition it would be worth combing the 'vestige' items, including those marked 'residences', and incorporating them in the main series, e.g. London Charterhouse has remains (R.C.H.M., *West London*); the Friars of the Sack, Rye (V.C.H., *Sussex*, ix, p. 43), are not mentioned. Curiously, there is no complete index, either of places—which would usefully check the one in Gasquet, *English monastic life*, 1908—or of the numerous subjects; the reviewer has compiled his own. The oft-forgotten distinction between churches and other monastic (or collegiate) buildings is made, with a summary of the latter (Appendix II); the chapter-house information in this, by the way, overlaps the Appendix (IV) devoted to these, and both might be correlated with chapter ii, Parts of a Monastery. To the list of monastic buildings now used as parish churches, the Lewes infirmary (now St. John, Southover) might be added. The remaining appendices are on incidental topics: those on apses, stalls, high vaults, altar and other screens, and double-aisled transepts are useful; X, summary of principal buildings, might go earlier, and III, the numbers surviving, later. The whole is preceded by general chapters on the monastic orders and on



parts of the monastery. Good photographic blocks fairly illustrate both churches and dependent buildings, with a preliminary series comparing the periods. The typography is equal to the careful subdivision of the material.

This book embodies an immense amount of research, exploration and correlation, and forms a useful foundation for future study. 'It will not go on my shelf', said an ecclesiologist friend of the reviewer, 'but on my table'. H.V.M.R.

**The Home Builders' Handbook**, by Kenneth Duncan. 10½ in. ix + 515 pp. text illus. MacMillan and Co. for Van Nostrand Co., Toronto. 1948. £1 18s. 6d.

An experienced American architect of tolerant, catholic tastes has written this book to warn and inform those about to plan, build, buy or remodel a house. It is of course not primarily intended for British readers and much that it contains is hardly appropriate to this country. No doubt, too, the tiresome knowing type of Briton who considers almost everything transatlantic to be in some way ludicrous or objectionable will find plenty of fuel on these pages for his scorn, but the less prejudiced will, I think, be grateful to Mr. Duncan for the remarkable amount of practical help that he has provided. It is a long and very full book, and for the potential home-builder in England there will be time enough to read it and little hope of profiting by the author's advice for years to come. There are hundreds of illustrations. J. C. P.

**Civic Theatre Design**, by Richard Leacroft. (International Theatre and Cinema series.) 8½ in. 123 pp. text illus. Dennis Dobson. 1949. 10s. 6d.

Architecture today is much influenced by factors which in former times were considered unrelated to actual building problems. The author who sets out to impart knowledge of a particular type of building must therefore have as wide a knowledge of all the problems involved as the combined knowledge of individual readers interested in one aspect of the subject only.

The combination of architectural *savoir faire* and intimate association with the theatre is an essential for the writer of books on theatre design. Mr. Leacroft has these rare but necessary qualifications. Moreover, Mr. Leacroft has his feet on the ground. This is rare too. As a man of the theatre he recognizes the limitations imposed on design by existing conditions. He writes for what is, and not for what might be. But, so far as it is possible to look ahead to a time when theatre building may be economically practicable, the author does so in a practical way.

No work of this kind can be complete without an historical survey. The essentials of historical influence are clearly treated, textually and graphically, in fifteen pages. That done, the present-day needs are clearly defined under five headings: Experimental Theatre, National Theatre, Civic Theatre, Commercial Theatre and Halls.

Whether Civic Theatre is a good name is beside the point. The type of theatre

which Mr. Leacroft goes on to describe under this heading is, I think it may be said unquestionably, of the greatest public entertainment and cultural value, and is a vital need.

For those who aspire to break with the tradition of the picture frame stage this book will be of little help, except in so far as it sets out the argument in favour of the picture frame. But in general this is a useful work, the text being well cross-referenced to other sources and regulations affecting theatre design.

**Stage Planning and Equipment for Multi-purpose Halls, etc.**, by P. Corry. 8½ in. xii + 111 + (iv) folding pls. text illus. Strand Electric and Engineering Company Ltd. [1949.] 5s.

Mr. Corry deals with a different aspect of theatre design from Mr. Leacroft. There will not, I venture to predict, be so good a response to this work from the acting profession, because the author sets out to deal with planning and equipment for multi-purpose halls. Dramatically speaking, such buildings are not and never can be theatres. It is therefore unfortunate that the title goes on to embrace—in smaller type—little theatres, civic theatres, etc. The two types can not, or should not, be treated together.

This is not to say that there is no demand for multi-purpose halls. There is. It is a demand which many architects are called upon to meet, and the solution of the problems involved may be even more important than those presented by the theatre proper, for the simple reason that these halls are wanted now.

In the main this book gives valuable data, but because of the attempt to embrace more than one category of building in a small volume, some of the suggestions may be open to question. A notable example is the proposal for apron stage treatment on page 23. An apron is necessary or it is not. If it is necessary, it must be a true apron. The example shown is not an apron.

A section of the book is devoted to stage lighting equipment. This is treated in some detail, which may assist architects in discussing their requirements with specialists in this line.

So long as there is no confusion in the reader's mind as to where multi-purpose halls stop and theatres begin, this book can be recommended to those architects who are unfortunate enough to be asked to design the former. CHARLES CRICHTON [4]

**Planning, E. and O. E. (S. Rowland Pierce and Patrick Cutbush)**, 6th ed. 11½ in. 487 pp. text illus. Gilbert Wood for the ARCHITECT AND BUILDING NEWS. 1949. £1 1s.

The latest edition of this most valuable reference book has been thoroughly revised and received substantial reinforcement in certain sections. The authors, no longer anonymous, once more emphasize that they do not offer the key to architecture, but have tried to provide the essentials of plan types and the outlines of more important details affecting three-dimensional planning. The new format makes for easier handling. J. C. P.

## Review of Films—17

*The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 mm. and 16 mm.) are given. Sound films are marked 'sd', and silent 'st'. The running time is given in minutes.*

(F) indicates free distribution.

(H) indicates that a hiring fee is payable.

**Building on Shrinkable Clays** Britain 1949 (F)

*Summary.* Some of the difficulties that may arise in connection with foundations on shrinkable clays and a method of overcoming these by the use of short bored piles. Comparison of different types of foundations; the necessity for boring deep enough to penetrate into clay which is not subject to seasonal shrinkage; some hand-operated boring tools and a mechanical borer; correct mixes of concrete; brief reference to load bearing beams supported by pile foundations; examples of schools built on such foundations.

*Appraisal.* A short and excellent up-to-date film giving accurate factual information. It could with advantage be slightly longer so as to allow more technical data to be included. The photography is good and the commentary both clear and interesting, although some of the diagrams are rather poor. The musical sequences could with advantage be omitted. The film is intended to be seen in conjunction with the film on 'How Tree Roots Can Damage Buildings'. 16 sd. 7 minutes. The Director, Building Research Station, Garston, Watford, Herts.

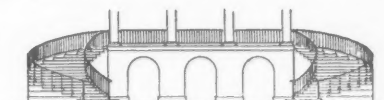
**Experiments in Blocklaying** Britain 1949 (F)

*Summary.* The effect of different block sizes on building output based largely on National Building Studies—Technical Paper No. 1, 'A Work Study in Blocklaying'. Brief historical survey of buildings in which different kinds of material were used; varying types and sizes of blocks, some with special handling devices; the saving of time effected by the use of large blocks; comparison in bricklaying hours of the time taken to build with different types of blocks.

*Appraisal.* The opening historical sequence is dull and too long for a film designed for technicians. The choice of the Houses of Parliament as an example of good stonework is unfortunate.

The presentation of the technical part of the film is good; interesting and useful information is conveyed in a competent manner with a clear commentary. The drawing and lettering in the diagrams are rather poor; musical sequences could be omitted in a film of this kind. On the whole an up-to-date and useful film.

16 sd. 15 minutes. The Director, Building Research Station, Garston, Watford, Herts.



# Correspondence

## THOUGHTS ON THE SOANE AWARD

Sir,—Mr. Hope Bagenal's criticism of some aspects of the Soane award draws attention to a general malaise—the absence of architecture from our buildings today. We have borrowed from Frank Lloyd Wright, Corbusier and from Dudok (now slightly old-fashioned), and the result is the Box-and-String kind of design of which we see so much. And how tiresome have become the plagiarisms, repeated *ad nauseam*, the glass-walled staircases, the endless ranks of windows, the honeycomb-patterns on walls, the 'rope' balustradings!

To be really in the fashion (and fashion is all that it really is) one must have some slightly slanting supports (as if tipsy) and one or two walls on plan positively not at right angles to any adjacent. Walls and roofs are composed of innumerable layers like the wrappings of mummies. God knows what will happen to them in this variable climate of ours, and one suspects that this sandwich-construction often costs more than more normal methods and secures little if any advantage. What sculpture there is displays a heavy-handed conglomeration of amorphous gleanings from many tainted sources, and I say 'what sculpture there is' because it is in fact scarce. We do little to keep the wolf from the doors of our sculptor brethren.

Some of those at the top perpetrate and perpetuate many of the fashionable stunts of the times and ought to know better. Is it not time we produced something more than 'Box-and-String' and clothed these skeletons with a little architecture? The youthful will retort that what I allude to is not architecture, and the reply would be that the visible productions of many centuries are thus apparently 'not architecture'.

Economy and scarcity are blamed. One suspects these are dear to many as an excuse for this agglomeration of corrugations, degradations and denudations which is 'Architecture' today.—Yours faithfully,

KENNETH GLOVER [F]

Sir,—Those of an older generation of architects are always interested in seeing what the younger men are doing, and the direction in which their thoughts are tending. The Exhibition of the R.I.B.A. Prizes and Scholarships furnishes such an opportunity. It is, however, an unpleasant surprise to find that a jury appointed by the Council of the Institute, select for the Soane Medallion a design for an English parish church, so devoid of tradition, beauty, dignity and scholarship.

I feel that the student is not so much to blame as the jury. The R.I.B.A. has the responsibility of encouraging and maintaining so far as possible the public taste in matters architectural. These efforts by the students are indications as to what is

being taught in our schools, and, moreover, what is likely to develop from such instruction. This stark, deformed, unemotional design unrelated to its great and spiritual purpose will not I trust be the future model of our English parish church. If that is so, all I can say is the glory has indeed departed.—Yours faithfully,

HOLLAND W. HOBBS [F]

Sir,—I am grateful for Mr. Hope Bagenal's criticism of my design for a church in the Soane Competition. The three main points mentioned could be quite important though they tend to ignore what I believe to be the purpose of such competitions.

The students—qualified architects whose ability to design such a subject is doubted by Mr. Hope Bagenal—are required to solve a hypothetical problem with the aims of bringing fresh ideas into a subject of current interest and of stimulating controversy. Naturally, Mr. Hope Bagenal's 'certain fantasy' will be present under such conditions, as the final schemes are only elaborated twelve-hour sketches in the process of design, showing the general form of construction and technical services and not showing the details which would normally be the result of months of deliberation.

That a flutter echo may be produced by the barrel roof is a possibility but not an inevitable result. Acoustically the scheme was developed on far broader principles in an attempt, right or wrong, to correct the 'lagging behind' of church music, not so much due to the long reverberation periods of churches but to the varying sound paths reaching the traditionally placed organist—the decanal sound, the cantorial sound, the reflected organ sound and the congregation sound—plus the delay between pressing the organ key and the playing of the pipe. It would seem that by giving all these sounds equal paths to the organist by first reflection a solution may be obtained.

The area of glass is not excessive. The large 'east' windows, being composed of lenses, glass blocks, decorated glass and concrete, would have a heat transmittance value not far removed from solid walling. The clear glazing in the saw tooth wall is not only in narrow 2 ft. strips capable of double glazing, but represents only 15 per cent of the floor area.

I feel sure that Mr. Hope Bagenal's remarks on the durability of materials are directed against some of the buildings erected in the first flush of enthusiasm of the early 1930's, but I am not sure what is meant by the appeal 'to develop a rational style to satisfy short and long term building'. Surely we are desperately striving for the establishment of a vernacular that will give us the true architecture of our age. Such monumental, abstract buildings, usually representative of the culmination of the cycle of a society's growth, can not be perfected or consciously developed in a few decades.—Yours faithfully,

COLIN LAIRD [4]

## MEMORIAL TO THE LATE F. W. H. ALLISON

Sir,—May we crave the hospitality of your columns to inform his many friends in the profession that a fund has been opened to provide a suitable memorial to the Leeds School of Architecture to the late F. W. H. Allison, who was intimately associated with the school as student, lecturer and Deputy Head, for more than a quarter of a century before his death in November 1948.

As members of the Memorial Committee we believe that a large number of past and present students of the school, professional colleagues and others, to whom Allison acted as friend and counsellor during those years, will welcome an opportunity to contribute, so that a sum sufficient to endow an annual prize or scholarship will be forthcoming.

May we ask that any of your readers who may wish to show their appreciation of Allison's work should send their contributions to the Treasurer, The Allison Memorial Fund, The Leeds School of Architecture, 43a Woodhouse Lane, Leeds, 2. Cheques should be made payable to the Allison Memorial Fund.—Yours faithfully,

G. DOYLE	T. H. LODGE
W. A. EDEN	P. W. MARSHALL
W. H. KING	A. V. MONTAGUE
A. B. LACY	J. R. TOLSON

City of Leeds College of Art,  
The Leeds School of Architecture

## MAZE

Sir,—May I refer to the article in the 'Correspondence' column of your issue of January 1950, concerning the architectural maze of Rheims cathedral.

It will be noticed, should the maze be followed from its means of access at the base to its ultimate conclusion, that it passes first into the enclosure occupied by the figure at bottom right, and then follows an anti-clockwise motion round the maze, finally reaching the central figure, via the one at bottom left.

I suggest, therefore, that the architects and their respective dates represented by the mosaic figures, should not follow a clockwise motion as indicated in the article, but should be as follows:

1211-1240. Jean d'Orbais (Right bottom).  
1240-1256. Jean le Loup (Right top).  
1256-1264. Gaucher (Left top).  
1264-1299. de Soissons (Left bottom).

The central figure appears to be kneeling in the act of praying, and could, I think, be indicative of the completion of the work, and the fulfilment of its purpose.

Yours faithfully,

G. CALLAGHAN [Student]

**Editor's Note.**—We, too, had followed the maze with a pencil and found that it reached each figure in turn, in an anti-clockwise direction. Nevertheless, the names attributed to the figures are exactly as given in Wanscher's 'Architekturens Historie'.

## THE WORK OF LETHABY, WEBB AND MORRIS

Sir,—The report in the JOURNAL of the brief remarks that I made on 21 February, after Mr. Rooke had read his paper, contains a rather startling error, and I ask your kind permission to draw attention to it.

The sentence which runs 'He had not the slightest hesitation in saying that architects were people who ought to be abolished' is made to appear as if it were Lethaby who had been the abolitionist. But it was John T. Emmett, a fierce critic who wrote

in the QUARTERLY REVIEW about seventy years ago as, in fact, I said. Unhappily, my remarks have been cut, and Emmett's name is not even mentioned. You will remember that I was trying to lay emphasis on Lethaby's kindness, and, with this in view, I pointed out the difference between Emmett's violence and Lethaby's more gentle ways. However, I am sure that Lethaby never either said or thought that his profession should be abolished. He had a very high regard for it.

Yours faithfully,

J. G. NOPPEN, F.S.A.

## PLUS 'GRANNY' FLATS

Sir,—The August 1945 JOURNAL kindly published my article advocating 'Plus Granny Flats', illustrated by the plans of Edward Armstrong [F]. I should be so much interested if architects would let me know whether they have since carried out this idea, namely, that of a semi-detached dwelling adjoining a larger one, and suited to the needs of an elderly or infirm single tenant.

Yours faithfully,

OLIVE MATTHEWS,

United Societies Club,

22 Harrington Gardens, London, S.W.7

# Notes and Notices

## NOTICES

**The One Hundred and Twelfth Annual General Meeting, Tuesday 2 May 1950**

The One Hundred and Twelfth Annual General Meeting will be held on Tuesday 2 May 1950 for the following purposes:

To read the minutes of the Sixth General Meeting held on 7 March 1950; formally to admit new members attending for the first time since their election.

To receive the Annual Report of the Council and Committees for the official year 1949-50.

(Copies of the Annual Report were sent to members on 18 April.)

It will facilitate answers to questions if members will give the Secretary prior notice of any questions which they may wish to ask. Notices should be in the Secretary's hands not later than 22 April. This will not preclude the right of members to ask questions on the Annual Report without having given prior notice.

To nominate candidates (two members) for the office of Hon. Auditors for the ensuing year.

To receive the list of attendances at the Council during the Session.

(Light refreshments will be provided before the meeting.)

## R.I.B.A. Kalendar

The next issue of the Kalendar will be published in the autumn and members and Students wishing to notify new addresses, etc. for publication should do so as soon as possible. The last date for receiving changes for inclusion in the new Kalendar will be 31 May for those in the United Kingdom and the Republic of Ireland, and for those overseas the last date will be 30 June.

It will still be necessary to restrict members and Students to one address each.

## Annual Subscriptions and Contributions

Members' subscriptions and Students' contributions for 1950 became due on 1 January. The amounts are as follows:

	£	s.	d.
Fellows .. .. .	7	7	0
Associates .. .. .	4	4	0
Licentiates .. .. .	4	4	0
Students .. .. .	1	11	6

For members resident in the trans-oceanic dominions who are members of Allied Societies in those dominions, and for members resident overseas in areas where no Allied Society is available, the amounts are as follows:

	£	s.	d.
Fellows .. .. .	4	4	0
Associates .. .. .	3	3	0
Licentiates .. .. .	3	3	0

## British Architects' Conference, Bristol and Bath, 7-10 June 1950

All members and students of the R.I.B.A. and the Allied and Associated Societies are cordially

invited to attend the Conference. Full particulars of the programme were enclosed with the March issue of the JOURNAL.

Members of the R.I.B.A. and the Allied Societies who are officials of local authorities will be welcomed as delegates to the Conference.

It will greatly facilitate the arrangements if members who propose attending will fill up the fly-sheet attached to the programme and return it as early as possible to the Secretary, R.I.B.A., and in any case not later than 13 May.

It is expected that there will be a large attendance of members from all parts of the country, and they are advised to arrange their hotel accommodation at the earliest possible moment to avoid the risk of disappointment.

The Executive Committee of the Conference have furnished a list of hotels in and around Bristol and Bath which is included in the Conference programme.

## BOARD OF ARCHITECTURAL EDUCATION

### R.I.B.A. Prizes and Studentships: The Ashpitel Prize, 1949

The Ashpitel Prize, which is a prize of books to the value of £20, awarded to the candidate who, taking the Final Examination to qualify as an Associate, most highly distinguishes himself among the candidates in the Final Examinations of the year, has been awarded to Mr. Roger Nicholas Radford, B.A.(Cantab.) [A] (Cambridge University School of Architecture).

### R.I.B.A. Diploma in Town Planning

The following applicants having passed the qualifying Examination, have been awarded the R.I.B.A. Diploma in Town Planning: Brian W. B. Ball [A], David K. Graham-Cumming [A], Clive R. W. Peake [A], Paul H. G. Rexilius [A], Roy D. Thornley [A].

## COMPETITIONS

### Competition for Medical Buildings Extension, Edinburgh University

The University of Edinburgh invite architects to submit designs in competition for an extension to the Medical Buildings to be erected on a site on the north side of George Square, Edinburgh.

Assessor: Mr. A. G. R. Mackenzie, A.R.S.A. [F].

Premiums: 1,000 gns., 600 gns., 300 gns.

Last day for submitting designs: 30 September 1950.

Conditions may be obtained on application to the Secretary of the University, Edinburgh. Deposit £2 2s.

**Competition for the Design of Concrete Bridges**  
The Cement and Concrete Association invite engineers and architects to submit designs in competition for prestressed, reinforced or plain concrete bridges over motorways.

Assessors: Sir Percy Thomas, O.B.E. (Past President); Mr. J. Cuere, B.Sc., M.I.C.E.; Mr. A. Moller, M.I.Struct.E.; Mr. E. John Powell, M.I.C.E., M.I.Mun.E.; Mr. J. Reed, B.Sc., M.I.C.E., M.I.Struct.E., M.Cons.E.  
Premiums: £500, £300, £200.

Last day for submitting designs: 31 May 1950.

Conditions may be obtained on application to the Cement and Concrete Association, 52 Grosvenor Gardens, S.W.1. Applications must be accompanied by a postal order for one shilling.

**Architectural Competition: Nairobi City Hall**  
The Municipal Council of Nairobi, Kenya, invites architects resident in the United Kingdom and all British Dominions, Colonies and Dependencies to submit designs in competition for new City Halls and Offices which it proposes to erect in Nairobi.

Assessor: Prof. L. W. Thornton White [F], Cape Town.

Premiums: £550, £450, £250.

Last day for posting designs: 31 August 1950.

Conditions may be obtained on application, preferably by air mail, to The Town Clerk, P.O. Box 651, Town Hall, Nairobi, Kenya. Deposit £2 2s.

### Proposed Memorial to the Royal Naval Patrol Service of the 1939-45 War at Lowestoft

The Imperial War Graves Commission invite architects who are ex-serving full time members of His Majesty's Forces to submit designs in competition for a Memorial which they propose to erect on a site in Bellevue Park, Lowestoft, to commemorate the names of officers and men of the Royal Naval Patrol Service fallen in the 1939-45 War who have no known graves.

Assessor: Mr. Edward Maufe, R.A. [F].

Premiums: £100, £60, £30.

Last day for submitting designs: 26 May 1950.

Conditions may be obtained on application to The Secretary, Imperial War Graves Commission, 32 Grosvenor Gardens, S.W.1. Deposit £1. Applicants for the Conditions must state: (a) their architect's registration number, (b) the branch of H.M. Forces in which they served.

## COMPETITION RESULT

### Competition for the Interior Design of the Modern Public House

1. Ernst Pollak, Victor Prus, Charles Hasler, Philip Sharland and Richard Negus.

2. Maurice Russell and Geoffrey Dunn.

3. Ian Grant [A] and D. B. Bullivant [A].

Commended: Terence Bliss [A] and George Subiotto [A], Peter Oldfield.



## ALLIED SOCIETIES

### Changes in Officers and Addresses

**Buckinghamshire Society of Architects.** Chairman, Mr. F. A. C. Maunders, A.M.T.P.I. [F], Architect's Department, County Offices, Bucks County Council, Walton Street, Aylesbury, Bucks.

**Institute of Architects of Malaya.** President, Mr. P. O. G. Wakeham [A], Messrs. Palmer and Turner, French Bank Building, D'Almeida Street, Singapore.

**Essex, Cambridge and Hertfordshire Society of Architects—Hertfordshire Chapter.** Chairman, Mr. H. J. Davies [F], 44 Marshalls Drive, St. Albans, Herts. **West Essex Chapter.** Chairman, Mr. A. W. Pipe, F.R.I.C.S. [L], 8 Queen Street, London, E.C.4. **Glasgow Institute of Architects.** President, Mr. E. G. Wylie, C.B.E., M.C. [F], 120 Blythswood Street, Glasgow, C.2.

**West Yorkshire Society of Architects—Bradford Branch.** Chairman, Mr. E. O. Robinson [A], 'Parkfield', Lady Lane, Bingley, Yorkshire.

**York and East Yorkshire Architectural Society—Hull and District Chapter.** Chairman, Mr. A. J. Steel [A], Astragal House, 199 Anlaby House, Kingston-upon-Hull, Yorkshire; Hon. Sec., Mr. D. Earle Walker [A], 'The Hermitage', South Cave, Brough, Yorkshire.

**Devon and Cornwall Architectural Society.** President, Mr. H. J. Hammick [L], 'Alfriston', 21 Alma Road, Plymouth. **Plymouth Branch.** Chairman, Mr. Cameron Beaumont [A], 78 Torr Lane, Hartley, Plymouth.

### Royal Society of Ulster Architects' Annual Dinner

The Annual Dinner of the Royal Society of Ulster Architects was held in Belfast Castle on 15 February, when many members and others attended to welcome the guest of honour, Mr. Michael Waterhouse, M.C., President, R.I.B.A. Mr. C. D. Spragg, C.B.E., Secretary, R.I.B.A., accompanied the President. The members and guests were received by Mr. Waterhouse and the President of the R.S.U.A., Mr. A. F. Lucy, F.R.I.A.I., who presided, and Mrs. Lucy, and included many prominent representatives of government departments, local authorities and professional institutions.

The toast of the Government of Northern Ireland was proposed by Mr. J. D. McCutcheon, a member of the R.S.U.A. Council. Referring to the recent relaxation in the housing regulations, Mr. McCutcheon felt sure that this was appreciated very much by local authorities. The great need for a Chair of Architecture in Belfast was stressed by Mr. McCutcheon. The Minister of Health and Local Government, Dame Dehra Parker, D.B.E., M.P., replying, said the proposal for a School of Architecture 'does mark a great step forward'. Speaking as President of C.E.M.A., Dame Dehra said that the architectural exhibition which the R.S.U.A. were arranging for 1951 would not only be connected with the Festival of Britain, but would also mark the jubilee of the Society. Moreover, the British Architects' Conference was being held in Belfast during the same period.

Sir Lucius O'Brien, Chairman of the Northern Ireland Housing Trust, proposing the toast of the R.I.B.A. and the R.S.U.A., said he hoped that the vision of a School of Architecture would soon be realized. In reply, the President, R.I.B.A., stressed the need for education and 'good manners' in architecture in relation to the countryside, and said that the best type of school was one which was attached to a university. Mr. Waterhouse said he would like to say how fortunate Northern Ireland was in its Housing Trust and what it had done. Replying for the R.S.U.A., Mr. Lucy referred to the proposed Chair of

Architecture and said that overtures had been made to the Senate of Queen's University, Belfast, who had set up an *ad-hoc* committee to consider the request, and he hoped that a decision would be reached soon. In view of the great need for architectural education in Northern Ireland he felt the answer must be in the affirmative. Councillor J. H. Norrith, J.P., Deputy Lord Mayor, replied to the toast of the City of Belfast, which was proposed by Captain J. R. Young [F], a past President of the R.S.U.A. Mr. J. S. Munce, B.E. [L], proposed the toast of 'Our Guests', to which Mr. J. M. Fairweather, F.R.I.A.I. (President of the Royal Institute of the Architects of Ireland), Major J. H. A. Patton, M.C., M.I.C.E. (Chairman, Northern Ireland Branch of the Institution of Civil Engineers), and Mr. W. R. Ferris, F.R.I.C.S. (Chairman, Northern Ireland Branch of the Royal Institution of Chartered Surveyors) replied.

### Birmingham and Five Counties Architectural Association

The Annual Dinner and Dance of the Birmingham and Five Counties Architectural Association was held at the Grand Hotel, Birmingham, on Friday 24 February. Some 420 members and guests were present, and Mr. Frank J. Osborne, M.C. [F], President of the Association, presided and proposed the toast of 'The City of Birmingham'. He commented on the Birmingham scene, with particular reference to the problems of the outer suburbs, and pointed out the advantages which seemed to accrue from the building of the houses round courtyards rather than separating them as is done in the present policy. The Lord Mayor of Birmingham, Alderman H. Humphries, responded.

The toast of 'The R.I.B.A. and its Allied Societies' was proposed by Professor Humphrey Humphreys, O.B.E., M.C., F.S.A., Vice-Principal of the University of Birmingham, who discussed some aspects of the recent proposals to link Birmingham School of Architecture with the University. Responding, Mr. A. B. Knapp-Fisher, F.S.A. [F], Vice-President, R.I.B.A., reviewed the present position of the profession. The toast of 'Our Guests' was proposed by Mr. A. H. Gardner, Vice-President of the Association, and responded to by Professor A. E. Richardson, R.A., M.A., F.S.A. [F].

### Glasgow Institute of Architects' Social.

The Glasgow Institute of Architects again held a social function this year. Last year's social function, the first which had been held for many years, was such a tremendous success that on Mr. George Laird very kindly undertaking to run another function this year, the Council accepted his suggestion with great pleasure.

This year's function took the form of a Dinner-Dance and was held in the Grosvenor Restaurant, Glasgow, on the night of 14 March. The Glasgow Institute was honoured by the presence again of Mr. Michael Waterhouse, M.C., President R.I.B.A., and his wife and daughter Miss Caroline Waterhouse. The President of the Royal Incorporation of Architects in Scotland was also present and Mr. J. Steel Maitland, President of the Glasgow Institute of Architects, occupied the Chair.

The numbers this year exceeded the large numbers last year, there being over three hundred present. The evening was considered by all present to have been as successful as last year.

### South Wales Institute of Architects' Annual Dinner Dance

The South Wales Institute of Architects held their Annual Dinner and Dance at the Park Hotel, Cardiff, on 29 March 1950. The Chair was taken at the Dinner by the President of the

South Wales Institute of Architects, Mr. Edwin T. Smith, F.R.I.C.S. [F]. The toast of 'The R.I.B.A. and the South Wales Institute of Architects' was proposed by Captain Geoffrey Crawshaw, D.L., J.P., Chairman of the Welsh Board of Health, and responded to by the President, R.I.B.A., Mr. Michael Waterhouse, M.C., and by the President of the South Wales Institute of Architects, Mr. Edwin T. Smith. The toast of 'The City and trade of Cardiff' was proposed by Sir Percy Thomas, O.B.E., LL.D., J.P., Past President, R.I.B.A., and responded to by the Deputy Lord Mayor of Cardiff, Councillor W. H. J. Muston.

Mr. Gordon H. Griffiths, A.M.T.P.I. [F], proposed the toast to 'The Guests', and this was responded to by Mr. G. G. Walters, Director for Wales, Ministry of Works, and by Mr. Dennis H. Morgan, F.C.A., President of the South Wales and Monmouthshire Chartered Accountants. Mr. Everard Haynes, Secretary of the Board of Architectural Education, was present at the Dinner.

The proceedings terminated with a dance at the Whitehall Rooms, Park Hotel.

### The Centenary Exhibition of Bristol Society of Architects

Bristol Society of Architects, as at present constituted, was launched on 3 April 1850, when thirteen architects met at the Institution in Park Street, Bristol, and agreed upon a constitution. To commemorate the centenary an exhibition entitled *One Hundred Years of Architecture in Wessex* was opened at the Bristol Art Gallery on Monday 3 April by Mr. John Betjeman in the presence of the Deputy Lord Mayor, Alderman Charles Gill, and a representative assembly of members and guests of the Society.

The inaugural ceremony was preceded by a luncheon attended by Council members, and a number of guests, including the Deputy Lord Mayor, Mr. A. B. Knapp-Fisher, Vice-President R.I.B.A., the Presidents of the Hampshire and Isle of Wight Architectural Association and of the Gloucestershire Architectural Association, the Vice-Chancellor of Bristol University and representatives of many of the kindred professional organizations in Bristol.

Mr. John Betjeman in his address at the opening of the exhibition stressed the significance of the occasion not only because it marked the completion of one hundred years in the life of the Bristol Society of Architects, but also because this was the first time within his knowledge that a serious survey of Victorian architecture had been attempted. Mr. Knapp-Fisher proposed a vote of thanks to Mr. Betjeman, and this was seconded by Mr. R. S. Redwood [A], the president of the Bristol Society, who also took the opportunity of thanking Mr. Lance Wright [A] for his work in selecting the material, organizing the photography, and in mounting the exhibition.

(See also page 205.)

## GENERAL NOTES

### British School at Rome—Rome Scholarship in Architecture 1951.

The Faculty of Architecture of the British School at Rome have made certain important changes in the competition for the Rome Scholarship of 1951. Candidates will be admitted to the competition only if they have passed the final examination of the R.I.B.A. or one of its recognized equivalents. Applications for admission will be examined by the Faculty and not more than twelve candidates will be chosen to take part in the first stage of the competition, which will consist of a 32-hour 'en loge' test to be held in London. On the result of this test will be chosen the candidates to com-

pete in the final stage of the competition for which a separate programme will be set and in which there will be no 'en loge' examination. Candidates will be given not more than twelve weeks to complete their designs in their own time and place.

Applications for admission to the competition must be sent not later than 16 October 1950 to the Hon. General Secretary, British School at Rome, 1, Lowther Gardens, Exhibition Road, London, S.W.7, from whom full particulars may be obtained.

#### British School at Rome

The Faculty of Architecture of the British School at Rome announce that the following candidates have been admitted to the final stage of the competition for the Rome Scholarship in Architecture of 1950: R. K. H. Johnson, B.Arch., D. Le M. Brock, B.Arch., D. Robinson, B.Arch., H. N. Mason, B.Arch. [A], C. H. Barnett, B.Arch. [A] (Liverpool University School of Architecture); B. G. Cobb, D. A. Cobb, D. G. Fenter, B.A., T. A. Markus, B.A. [A] (Manchester University

School of Architecture); E. Carter, A. R. Irving (Durham University School of Architecture); W. F. Howitt [A] (Dundee School of Architecture).

The Rome Scholarship is at present of the value of £375 a year, and is ordinarily tenable for two years at the British School at Rome. It is provided by a grant from the R.I.B.A.

#### Twentieth International Congress for Housing and Town Planning

The XXth International Congress for Housing and Town Planning will be held at the City University, Amsterdam, from 27 August to 2 September 1950. A four-day study tour of Holland is being arranged in the following week.

The subjects chosen for discussion at the four main sessions are *The Role of the Voluntary Housing Association, The Implementation of Planning Measures, Prefabrication and New Building Technique for Housing, and Town and Country Planning and Industry*. In addition to these main sessions, there will be a number of informal study groups on various subjects of interest to our members.

The preliminary programme of the Congress giving complete details is available from The Business Secretary, International Federation for Housing and Town Planning, Singel 453, Amsterdam C.

#### R.I.B.A. Cricket Club Dinner

The members of the R.I.B.A. cricket club met at the Horse and Dolphin, St. Martin's St., London, on 9 March for their annual dinner and to discuss arrangements for the forthcoming season. The chair was taken by the captain, Mr. Douglas Taylor, and the guests were Mr. Eric L. Bird, Editor of the R.I.B.A. JOURNAL, and Mr. A. E. Bartholomew, of the R.I.B.A. staff. The Hon. Secretary, Mr. R. R. Fairbairn announced that three fixtures had been arranged: with the Blue Circle Cricket Club on 4 June, the A.A. Cricket Club on 21 June, and with the Blue Circle Cricket Club in July. He appealed for more members and wished it to be known that the annual subscription is very small and intended to do no more than cover current expenses. Young players would be specially welcomed.

## Obituaries

**Harry Redfern** [Ret. F] died at the age of 89 on 6 March last.

His architectural life was divided into two separate parts. For the first 19 years he was in private practice and for the remainder he was Chief Architect to the State Management Districts of the Home Office. Older members will recollect that in 1915 the State acquired the inns and public houses of the Carlisle district in order to control the unsatisfactory conditions arising from the enormous influx of labour to the new Gretna Green munitions factories. Harry Redfern was appointed architect and for many years he and his staff were deeply engaged in the difficult and subtle problems of making new hotels and inns from old, and occasionally building new ones. In this he had no high falutin' ideas, but strove to create homely and welcoming inns to which working men would wish to go. His work was a sound, unostentatious architectural service and his buildings rank high in the esteem of the connoisseurs of inns. His Department paid him the compliment of giving the name 'The Redfern Inn' to the last new inn built under his care.

He began practice in 1896 in London in partnership with the late John J. Stevenson, F.S.A. [F]—a partnership which existed until 1908. He was the architect of the chemical, metallurgical, physical and biological laboratories of Cambridge University and biochemistry laboratories of Oxford University. At Cambridge he restored portions of Christ's College and Magdalene College and also carried out additions and restoration work at Oriel College and St. John's College, Oxford. He specialized in the restoration and repair of old churches and mediaeval buildings. His domestic architecture included several houses for Cambridge dons. He was architect of the British Hospital at Port Said.

Mr. Redfern was a member of the Council from 1914-17, and during the same period of the Finance and House Committee and of the Fellowship Drawings Committee. He was sometime member of the Art Standing Committee, and from 1920-21 served as an Hon. Examiner (Architecture).

For 40 years he was a member of the Art Workers' Guild and from 1909 he was a member of the Committee of the Society for the Protection of Ancient Buildings. In 1915 he was Assistant Director of the Civic Survey of Greater London.

Mr. Joseph Seddon [F] writes:

'It was my privilege to be associated with Harry Redfern for more than thirty years, principally in connection with the work of remodelling and rebuilding hotels and inns in the State Management Districts of Carlisle, Gretna and Cromarty Firth.

'From the day in 1916 when he welcomed me to his office, until his retirement last September, I worked with him in happy harmony. He had the gift of making all members of his staff feel that they were his fellow workers, deeply interested in finding the best solutions to the problems that came along.

'When correspondence and official affairs were cleared off, he would be at the drawing board. He was happy when making all the drawings for such a job as a village inn; they would be beautifully drawn and designed in his characteristic, charming style. For others to work out, he made those scribbles (his word) which are an architect's shorthand; with a little practice in reading them, his scribbles conveyed much: or he could, in a few words, stimulate one's imagination and set one going—often with a free hand—on working out some scheme, with now and then a wise comment from the rich store of his experience. There was nothing of the aloof professional man about Harry Redfern, he was always happy in his dealings with builders and their workmen; he would talk over some bit of craftsmanship with a man, get him interested and say "That's the idea, just go on and enjoy yourself".

'I am sure I speak for many in saying that we shall treasure the memory of the pleasure it gave to work with him.'

**William Ernest Watson, T.D., Hon. LL.D., A.R.I.C.S., A.M.T.P.I.** [F].

In addition to the obituary appearing in the February JOURNAL, Mr. H. B. Creswell [Ret. F] writes:

'I read in THE TIMES of the sudden death of my old pal and valued friend William Ernest Watson with dismay, for only a week or two before a letter from him, giving a cheery account of himself, had crossed one of mine to him. I had not seen "W.E."—as he was known to me—for a year and more, as my limitations deter me from inflicting myself on busy people; and neither this letter, nor a previous one, had made any mention of the illness that kept him in hospital for several weeks during the summer, and involved a long convalescence. He reported of himself only that building restrictions had limited his activities, but that he "just went quietly along".

'This reticence was characteristic of W.E. It was not secretiveness, but part of the innate modesty of great men, for to that category W.E. essentially belonged. The firmness that marked alike his judgment, his opinions and his purposes was supported by a self-control that seemed imperturbable. There were amusing indications of this on the golf-course, where we were rivals in mediocrity, when my petulance in adversity was even reproved by W.E.'s stern self-command in like case.

'Though born in Sheffield, W.E. was emphatically a Scot. The strong, dark, hirsute brow, with the kindly blue eye gazing from beneath its pent; and the measured rhythm of the utterance with precise value given to consonants, was part of his personality; and his patrician tastes were also true to his blood: soldiering, riding, golf, fly-fishing and the wilds. So, too, was his appreciation of high quality in things, from the split cane fly rod to the haggis sent him every week from Scotland and the fish pie and Bradenham double-cured ham for which Sunningdale Golf Club was famous in days when I went there as his guest.

'The versatility of W.E.'s professional activities and attainments was phenomenal, and never, in my opinion, earned him due reward of recognition; but he had higher aims than success; and the many lame dogs that he helped over stiles, and others who, seeking his advice, lived to be grateful for rescue from litigation, stood for much with him.

'W.E. had a happy life. He was happy in himself, in his work, in his domestic life, and in his sons and grandchildren. He has left behind him endearing memories with many besides myself.'

**Joseph P. Jackson, T.D., J.P.** [F].

The death of Major J. P. Jackson occurred in August 1949 at the age of 82. Major Jackson, a Fellow and Original Member of the Land Agents Society, and had acted for Lord Delamere's Vale Royal Estate for 58 years, rendering valuable services as a magistrate, urban councillor and a member of the Cheshire County Council.

The son of a land agent in general practice in Ormskirk, Major Jackson came to Mid-Cheshire in 1891 to take over the management of the Vale Royal Estate. Ten years later he took over land agency work for Messrs. Brunner, Mond and Co. Ltd., and at the formation of Imperial Chemical Industries Ltd., his responsibilities were greatly increased and he was transferred to their headquarters in London. His appointment lasted till 1935, when he re-

tired but was retained in a consultative capacity. Elected to the Winsford Urban Council in 1894, he became chairman of that body in 1903. He was appointed a justice of the peace in 1914 and was elected to the County Council in 1927. He commanded the 3rd Volunteer Battalion, The Cheshire Regiment, from 1902 to 1908, when he passed to the Reserve of Officers, being recalled to duty on the outbreak of the first world war. He retired at the end of hostilities with the rank of Honorary Major and was later made Honorary Colonel of the Army Cadet Corps.

**Gronwy Robert Griffith, O.B.E., T.D. [F]**, Deputy Lieutenant for the County of Denbigh, practised in Denbigh at the date of his death, 8 February 1950, aged 68. He took an active and useful part in the civic, religious and social life of Denbigh, and there were over 250 people in attendance at his interment at Whitchurch.

Trained in the office of Mr. Edward Warren, of London, he went for a short period to Rhyl, and later established his practice in Denbigh. For many years he was Diocesan Surveyor to the Board of Dilapidations of the Church in Wales, and was the architect of several drill-halls in North Wales for the Territorial Army.

After being invalided out of the Army in the first world war, with the rank of captain (he was severely wounded in 1915), he became recruiting officer for the 4th Battalion, Royal Welsh Fusiliers, which he at one time commanded, and for his valuable services in this connection was awarded the O.B.E. As an ex-Serviceman, he took an active interest in the affairs of the local British Legion.

He was a member of the Clwyd and Deeside Hospital Management Committee and Chairman of its Building Committee, and was for over thirty years a member of the Denbigh Town Council and was Mayor of Denbigh

from 1922-23 and again in the early part of the Second World War, in which capacity he launched several war-time organizations for the public weal. He was a life-long Churchman and a keen Rotarian.

**William R. Glen [L]** died in London on 19 February, aged 65.

He was Consultant Architect of Associated British Picture Corporation and had over twenty years service with the Corporation. He had been ill for over five months.

He attended the University of Glasgow and while still a student, joined the Glasgow Highlanders at the outbreak of World War I. He left the Army as a major, and continued his studies in architecture. Upon graduation, he entered private practice until 1929, when he joined the Associated British Picture Corporation as Chief Architect, under the late Mr. John Maxwell.

Mr. Glen leaves a widow and two daughters.

**Richard Wakeham White [F]** was an architect on the County Architect's staff of the Middlesex County Council, which he joined in 1919, and during the whole of his municipal service he was engaged upon the planning and design of all types of educational buildings. In 1937 he was given charge of the elementary schools section of the Council. He died on 24 February.

**John Tonner [L]**. The death of Mr. Tonner occurred on 9 March at his Greenock home. Elected a Licentiate of the R.I.B.A. in 1945, he was a partner in the architectural firm of Stewart, Tough and Alexander of Greenock.

**Sidney I. Ladds [A]**. His death, at the age of 82, occurred at Huntingdon on 5 March 1950. Mr. Ladds was for many years Surveyor to the

Dean and Chapter of Ely, and Diocesan Surveyor for Ely.

He had practised in Huntingdon for more than fifty years, and many houses in the county were designed by him, including the Norris Library and the Museum at St. Ives; he carried out restorations to several churches in Huntingdonshire.

**Harold George May, B.Sc., F.R.I.C.S., O.B.E. [L]**, who died on 8 March, aged 45, was a partner in the firm of Matthews and Son, of Gower Street, London, in whose office he was trained. He specialized in valuations and surveying. His principal architectural works were the factory of Eden Fisher and Co. Ltd. at Reading, and small factories and an information centre in North London.

**Joseph Peasod [A]**. The death occurred at Keswick, Cumberland, of Mr. Joseph Peasod who was elected Associate, R.I.B.A. in 1911. He was 68 years old. After practising in London, he returned to Keswick (his native town) about thirty years ago. He designed the first houses built by Keswick Urban District Council.

**John Bright Gladstone [L]**. One of Lockerbie's best known professional men and a member of a noted local family, Mr. J. B. Gladstone died last month aged 75. He began to practise on his own account in Lockerbie 46 years ago and was responsible for the design of a number of ecclesiastical buildings in the south of Scotland and north of England. He was elected Licentiate, R.I.B.A. in 1925.

A sportsman of repute, his favourite games were bowling and curling, and at both he excelled, winning many medals and trophies through his prowess with the local clubs. An active Freemason, Mr. Gladstone was also for many years secretary of his local branch of the Oddfellows.

## Membership Lists

### ELECTION: 4 APRIL 1950

The following candidates for membership were elected on 4 April 1950.

#### AS HON. FELLOW (1)

**Esher: The Viscount**, The Rt. Hon. Oliver Sylvain Baliol, M.B.E.

#### AS HON. ASSOCIATE (1)

**Montgomery: Hugh Roger Greville**, M.C., Amersham Common, Bucks.

#### AS FELLOWS (19)

**Allen: Joseph Stanley**, B.Arch., M.T.P.I. [A 1922], Newcastle-on-Tyne.

**Crossley: Frederick Hamer**, Dipl.Arch. (L'pool) [A 1925], Derby.

**Dyson: William Parker**, M.A. [A 1933], Cambridge.

**Holt: John**, Dip.Arch. (Dunelm), A.M.T.P.I., Dip.T.P. [A 1936], Bristol.

**Preston: Frederick Leslie**, A.A. Dipl. [A 1926].

**Senior: Denis** [A 1932], Chelmsford.

**Thoms: Thomas Hill** [A 1932], Dundee.

**Winbush: Harry Stephen** [A 1929], Melbourne, Australia.

and the following Licentiates who have passed the qualifying Examination:

**Burley: Sidney Frederick**.

**Hayson: Ernest William**, Birmingham.

**Lyons: Eric Alfred**, East Molesey, Surrey.

**Rubemann: Frederick Abraham**.

**Sibthorp: Thomas**, A.R.I.C.S., A.M.T.P.I.

**Singer: Oscar**.

**Sneller: Robert John**, Reading.

**Wood: Frank**, Edinburgh.

and the following Licentiates who are qualified under Section IV, Clause 4 (c) (ii) of the Supplemental Charter of 1925:

**Fitt: William James**.

**Parrott: Stanley Charles**, Luton.

**Symonds: Robert Wemyss**.

#### AS ASSOCIATES (140)

**Ashton: Henry Gerald**, Chelmsford.

**Ball: Alfred**.

**Bamber: Douglas Haig (Major)**, Blackpool.

**Bannington: Ernest Eugene**, Birmingham.

**Barron: Andrew Oliver Chalmers**, D.A. (Dundee), Dundee.

**Beesley: Sidney**, Sutton, Surrey.

**Bell: Norman**.

**Berger: Bernard Stanley David**.

**Bicknell: Algar John Deaville**, Romford.

**Birch: Frederick Leslie**, Walsall.

**Bloor: Geoffrey**, Liverpool.

**Boak: James Leonard**, Perth.

**Bollon: Clarence Montague**.

**Bowyer: Nancy (Miss)**, Dip.Arch. (Nott'm), Nottingham.

**Brewis: Francis Gordon**, Dip.Arch. (Dunelm), North Shields.

**Brown: Ian Collin**, Dip. Arch. (The Polytechnic).

**Brown: Thomas Frank**, Chester.

**Bruce: John George**.

**Bull: John Edward**, Bristol.

**Bullen: Leslie Dowswell**, Dip.Arch. (Manchester), Leigh, Lancs.

**Burstow: Ralph Ernest**, Bexhill-on-Sea, Sussex.

**Caldecott: Eleanor Mary (Miss)**, Dipl.Arch. (U.C.L.).

**Cavanagh: Andrew Leo**, Manchester.

**Ceal: Peter Henry**, B.A. (Arch.) (Manchester), Hale, Cheshire.

**Chatton: Edwin George**, Stockport.

**Cheeseman: Edwin John**, Carshalton, Surrey.

**Christie: Ewen Maxwell**, Wellington, New Zealand.

**Clarke: Denys Gregory**, Bath.

**Dancer: James Kenneth**, Stourbridge.

**Davies: Gwilym Ivor**, A.R.I.C.S., Newport, Mon.

**Dawson: Stanley**, Dipl.Arch. (Leeds), Taunton.

**Dixon: Norman John**.

**Dodd: Geoffrey Breton Davenport**, Southport.

**Dyer: Allan John**, West Wickham, Kent.

**Feilman: Margaret Anne (Miss)**, B.A., Netherlands, West Australia.

**Fenter: Donald George**, B.A. (Arch.), Manchester.

**Fenton: Reginald Frank Sydney**, Southend-on-Sea.

**Finch: Richard Wyndham**.

**Ford: John Arthur**, Surbiton, Surrey.

**Gallagher: Herbert Henry Asquith**, Biggin Hill, Kent.

**Gibson: Richard John**, Geelong, Victoria, Australia.

**Guard: Wilson Perrott**, Dublin.

**Gutteridge: Geoffrey Fowler**, M.A. Cantab., Southampton.

**Hammond: Gordon George William**, Bristol.

**Harrison: Raymond Owen**, Dip.Arch. (Melbourne), Elsternwick, Victoria, Australia.

**Heath: David Nigel**, Newcastle, Staffordshire.

**Hemmings: Lionel George**, Bromley, Kent.

**Henley: Jack Alphonso**, Hereford.

**Hesford: Arnold**, Manchester.

**Higginson: Frederick St. George**, Liverpool.

**Higwood: David Charles**, Dip.Arch. (The Polytechnic), Sutton, Surrey.

**Hollins: Peter Brian**, Southampton.

**Howell: Cuthbert Llewelyn**.

**Hughes: Geoffrey Edwin**, Dip.Arch. (The Polytechnic).

**Humphrey: Ernest [L]**, Purley.

**Hunt: Stanley Charles**, Chelmsford.

**Hutchinson: Frances Inglis (Miss)**, Melbourne, Australia.

**Inglis: Thomas**, Edinburgh.

**Jackson: George Cyril**, Carnforth, Lancs.



Judges: Alfred Charles, M.B.E. [L].  
 Kirby: George Alfred.  
 Kitching: Robert Arthur, Dip.Arch. (The Polytechnic).  
 Knight: Lawrence Peterson, Glasgow.  
 Koss: Ward, Dip.Arch. (The Polytechnic).  
 Kreeger: Bernard, Dip.Arch. (The Polytechnic).  
 Laker: Robert Alexander, Guildford.  
 Langton: Albert Henry, Huntingdon.  
 Lee: Norman William.  
 Le Pelley: Michael Gloor, Dip.Arch. (The Polytechnic).  
 Lewis: Ralph Henry.  
 Longville: Henry, Sunderland.  
 McEwen: Frederick Charles, Gateshead.  
 MacGovern: Noel Richard, B.A., Delgany, Co. Wicklow.  
 Mackillop: Angus Macintyre, D.A. (Dundee), Perth.  
 MacManus: George Robert Muir.  
 McMenan: William Murdoch Rigg, Bearsden, Dumbartonshire.  
 Mendelsohn: Edward, Dip.Arch. (The Polytechnic).  
 Mendleson: Joseph.  
 Menzies: Duncan Stewart, D.A. (Glas.), Paisley.  
 Miller: Peter Gordon, West Molesey, Surrey.  
 Moorcroft: Roy Langford, Gatley, Cheshire.  
 Morrell: Peter Frederick, Dip.Arch. (The Polytechnic).  
 Morris: Stanley Albert, Sydney, N.S.W., Australia.  
 Morris: Terence Parker, B.Arch. (Capetown), Salisbury, Southern Rhodesia.  
 Mountford: Edwin Arthur, Stoke-on-Trent.  
 Mountford: Jean Martindale (Miss), Dip.Arch. (The Polytechnic).

Muston: George Ronald Colin, Wellington, New Zealand.  
 Oldfield: Eric Francis.  
 Oliver: Walter James, Thundersley, Essex.  
 Owles: Alan Beaumont.  
 Page: Derek Edward, Chesham Bois, Bucks.  
 Pembury: Gerald Griffin [L], Kingston-on-Thames.  
 Polkinghorne: Richard William Joseph, A.R.I.C.S.  
 Poole: Jane Ruscombe (Miss).  
 Poole: Roger Eaton, Weston-super-Mare.  
 Price: June Constance Ethne (Miss), B.Arch. (L'pool), Liverpool.  
 Reynolds: Peter John, Oxford.  
 Richardson: Brian John, Dip.Arch. (The Polytechnic), Sevenoaks, Kent.  
 Roberts: Haworth Owen [L], Coventry.  
 Rooker: Leslie Donald, Hull.  
 Rowe: James Stewart, Shrewsbury.  
 Royle: Thomas Gilbert, Cheadle Hulme, Cheshire.  
 Rye: George William Arthur Francis, Maidstone.  
 Sawyer: Richard Loraine, York.  
 Sedgfield: Kingston Knight, Northbridge, N.S.W., Australia.  
 Shapiro: Benjamin Wouff, B. Arch. (Rand), Port Elizabeth, South Africa.  
 Sharp: Bruce Cunningham.  
 Sharp: James John (Capt.), Birmingham.  
 Shimmis: John Philip, Melbourne, Victoria, Australia.  
 Skingsley: Eric Stanley, East Horsley.  
 Slater: Roger Eric Macdonald.  
 Smart: Hugh Alexander, Dip.Arch. (The Polytechnic).

Smith: John Edmund, Leicester.  
 Smithurst: Alan Harry, Nottingham.  
 Snowdon: William, Newcastle-on-Tyne.  
 Souter: Allen Ernest.  
 Sparrow: Kenneth Geoffrey, M.A. [L], Maidstone.  
 Spittle: Stanley Denys Trevor, Cambridge.  
 Stacey: Stephen Leslie George, Tunbridge Wells, Kent.  
 Steptoe: Charles Cyril, East Croydon.  
 Stoneham: Derrick William, Luton.  
 Swarbrick: Maurice Victor Donald, Aldershot.  
 Tatnall: Derek Lloyd, Ilford.  
 Taylor: Gerald Roy [L], Aldershot.  
 Taylor: Joan Mary Clemence (Mrs.), Dip.Arch. (The Polytechnic).  
 Todhunter: Sybil Elizabeth (Miss), Carshalton Beeches, Surrey.  
 Tough: Jane McKendrick (Miss), Edinburgh.  
 Tugwell: Percival Dennis, Christchurch, Hants.  
 Vinton: Leonard George, Bulawayo, Southern Rhodesia.  
 Wadsworth: James Edward, Manchester.  
 Wainwright: Allan, Stockport.  
 Waite: Kenneth, Richmond, Surrey.  
 Walker: Richard Plumer, Southport.  
 Wardley: Joseph Arnold, Huntingdon.  
 Watermeyer: Errol Hobson, B.Arch. (Capetown), Port Elizabeth, South Africa.  
 Werbeloff: John Leslie, B.Arch. (Cape Town).  
 Williams: Anthony Touzeau, Keymer, Sussex.  
 Williams: Christopher Liddell, Congleton, Cheshire.  
 Woodward: Clifford, Grimsby.  
 Yeatman: David George, Lower Kingswood, Surrey.

## Notes from the Minutes of the Council

### MEETING HELD 7 MARCH 1950

#### Appointments

(A) R.I.B.A. Architecture Bronze Medal: The Nottingham, Derby and Lincoln Architectural Society: R.I.B.A. Representative on Jury: Mr. F. Leslie Halliday [F], President of the Manchester Society of Architects.

(B) Research Group on Internal Plumbing convened by the Institution of Water Engineers: R.I.B.A. Representatives: Mr. Richard Heniker [F] and Mr. Denzil Nield [A].

(C) Working Party preparing for International Conference on Building Research 1951: R.I.B.A. Representative: Mr. R. N. Wakelin [A] to be the sole R.I.B.A. representative, leaving Mr. Alister MacDonald [F] to act as independent Chairman of the Working Party.

The Honorary Fellowship: The Secretary reported that the Viscount Esher, M.B.E. [Hon. A], accepted the Council's nomination for election to the Honorary Fellowship.

The Honorary Associateship: The Secretary reported that Mr. Hugh Montgomery had accepted the Council's nomination for election to the Honorary Associateship.

R.I.B.A. Diploma in Town Planning: The Council approved the award of the R.I.B.A. Diploma in Town Planning to Messrs. Brian W. Ball [A], David K. Graham-Cumming [A], Clive R. W. Peake [A], Paul H. G. Rexilius [A], and Roy D. Thornley [A].

Dundee Institute of Architects: Revision of Rules: The Council approved a revision of the rules of the Dundee Institute of Architects in accordance with the provisions of Bye-law 71.

Scale of Professional Charges: Computation of Fees on Quantum Meruit: The attention of the

Council was drawn by the Practice Committee to a judgment recently given by Mr. Justice Birkett in the High Court concerning a claim for professional fees under Clause 2 (e) in respect of an abandoned project.

In consequence of this judgment the Council approved the addition of the following wording to Clause 2 (e) (i) of the Scale of Professional Charges:

Attention is drawn to the fact that it is impracticable to assess fees on the basis of quantum meruit solely in relation to the time occupied.

Such relevant factors as the character of the project, the intricacy of the work and the professional experience and standing of the architect should be taken into consideration.

Membership: The following members were elected: as Honorary Fellow, 1; as Fellows, 8; as Associates, 94; as Licentiates, 8. Students: 132 Probationers were elected as Students.

Applications for Election: Applications for election were approved as follows: Election 4 April 1950: as Honorary Fellow, 1; as Honorary Associate, 1; as Fellows, 18; as Associates, 127. Election 20 June 1950 (Overseas Candidates): as Fellows, 3; as Associates, 16.

Applications for Reinstatement: The following applications were approved: as Associate, Harry Vernon Godsall; as Licentiate: Francis Matthew Shea.

Resignations: The following resignations were accepted with regret: Miss Phyllis Mary Hutchings [A], Dr. Sushil Mallick [A], William Johnston Hogg [L].

Applications for Transfer to Retired Members' Class under Bye-law 15: The following applications were approved: as Retired Associate: George Sydney Herbert Bradford; as Retired

Licentiate: William Robert Hone Raysdown Rogers.

Obituary: The Secretary reported with regret the death of the following members: Frank Leonard Hodgson Fleming [F], Henry Percy Gordon [F], Gronwy Robert Griffith [F], Edgar Quiggin [F], Samuel Joseph Stainton [F], Leonard George Stokes [F], John William Smith [Retd. Member of the Society of Architects], Robert Bell Hamilton [A], Laurence Raby [A], William Riddell Glen [L], Robert Augustus Mansell [L], James Alexander Steedman [L], William Comley Roles [Retd. L].

## Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant, or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

### CORRECTION TO R.I.B.A. KALENDAR 1949-50

Mr. C. M. Bond [A] is Regional Architect, Ministry of Health and not Ministry of Works, as printed on page 132 of the current edition of the Kalendar.

### APPOINTMENTS

Mr. W. R. Hazlewood, A.M.T.P.I. [A], has been appointed Architect to the South Cambridgeshire R.D.C., and from 24 April his address will be South Cambridgeshire R.D.C., County Hall, Hobson Street, Cambridge.

Mr. Melville Ross [L], formerly on the architectural staff of the City Engineer, Lancaster, has taken up a new appointment as Assistant to Mr. J. R. Moore [A], Architect and Housing

Director to the Brierley Hill Urban District Council. Mr. Ross's address for future correspondence etc. is 2 Beech Road, Kingswinford, Staffs.

#### PRACTICES AND PARTNERSHIPS

**Mr. V. B. Ashbridge** [A] has opened an office at 38 Lowfield Street, Dartford, Kent, and will be pleased to receive trade catalogues etc.

**Mr. L. A. Culliford**, F.R.I.C.S., A.M.T.P.I. [F] and **Mr. L. A. Chackett**, F.R.I.C.S. [F], practising as **L. A. Culliford and Partners** at 47 Essex Street, Strand, London, W.C.2, have taken into partnership with effect from 5 April 1950 **Mr. R. W. J. Polkinghorne**, A.R.I.C.S. [A]. The style of the firm remains unchanged.

**Mr. Clifford E. Culpin** [F], practising as **Culpin and Son**, has taken into junior partnership his chief assistant, **Mr. W. W. Ryder** [A]. The practice will continue under the style of **Culpin and Son** from 3 Southampton Place, London, W.C.1 (HOLborn 0163).

**Mr. W. Sinclair Gaudie** [A] and **Mr. Arthur F. S. Wright**, M.B.E. [A], formerly practising under the style of **Gaudie, Hardie and Sharpe**, Dundee, and **Mr. John Needham** [F], of Bay House, West Ferry, Dundee, have combined their practices, and they will now all practise under the style of **Gaudie, Hardie, Wright and Needham** at 26 Commercial Street, Dundee (Dundee 4939). They will be pleased to receive trade catalogues etc. at that address.

**Mr. Wm. Leighton Gibbons** [A] has commenced practice at 3 Northernhay Place, Exeter (Exeter 56135) and will be pleased to receive trade catalogues etc.

**Mr. J. H. E. Hough** [A], who has terminated his appointment as Architect to the Martley R.D.C., is now in private practice at 12 High Street, Worcester (Worcester 4600), where he will be pleased to receive trade catalogues etc.

**Mr. George C. Jackson** [A], has commenced practice at 1, King's Close, Arnside, Carnforth, Lancs. and will be pleased to receive trade catalogues etc.

**Mr. Dudley G. Marsh** [L], of Westminster Bank Chambers, 40 William Street, Herne Bay, has extended his practice by opening a branch office at 6 Dane John, Canterbury. He will be pleased to receive trade catalogues etc. at the Canterbury address.

**Mr. Atholl Murray** [A] has taken **Mr. Albert Ruddiman** [A] into partnership, and the firm will be known as **Murray and Ruddiman** as from 31 March 1950. They practise at 6 Railway Avenue, Salisbury, Southern Rhodesia. P.O. Box 1969.

**Mr. Allan D. Reid** [F], of 30 John Street, Bedford Row, London, W.C.1, has opened an additional office at 49 Meneage Street, Helston, Cornwall.

**Mr. C. H. Rusha** [A] has commenced practice at 23 Pepys Road, New Cross, London, S.E.14 (New Cross 2342), and will be pleased to receive trade catalogues etc.

**Mr. Harry W. Smith** [F] has taken into partnership **Mr. Warren K. Smith** [A] and **Mr. H. O. Bailey** [A]. They will continue to practise at 29 George Street, Oxford (Oxford 2795) as **Harry W. Smith and Son**.

**Messrs. B. Stevens and Partners** (**Mr. B. Stevens**, F.R.I.C.S. [L], **Mr. A. J. McDonough**, A.R.I.C.S., Registered Architect, and **Mr. A. C. S. Hickes** [A]) of 31 Cornfield Road, Eastbourne, have opened an office at 49 Havelock Road, Hastings (Hastings 5368).

**Mr. J. S. Stout**, M.I.Struct.E., A.M.T.P.I. [L], who has practised at 36 Lowther Street, Whitehaven (Whitehaven 38) since 1901, announces that the partnership formerly existing between himself and **Mr. H. B. Stout** [A], formed on 1 January 1947 was dissolved on 31 December 1948.

**Mr. MacLeod Wallace** [A] has commenced practice at 5 East Pallant, Chichester, Sussex, and will be pleased to receive trade catalogues etc.

**Mr. A. Roland Walsingham** [L], of 50 High Grove Road, Cheadle, Cheshire (Gatley 4044), has opened an office at Victoria Buildings, 32 Deansgate, Manchester 3 (BLAckfriars 3851-3).

#### CHANGE OF ADDRESS

**Mr. F. Steven Alexander** [A] has removed from 161 Station Road, Hendon, London, N.W.4, to 11 Cophall Drive, Mill Hill, London, N.W.7.

**Messrs. Geo. T. Brown and Son** (**Mr. G. Talbot Brown** [F]) have transferred their offices from 51 Fawcett Street, Sunderland, to Barclays Bank Chambers, 53 Fawcett Street, Sunderland. The telephone number, Sunderland 4778, remains unchanged.

**Messrs. Caroe and Partners** (**A. D. R. Caroe** [F], **A. P. Robinson** [F], and **Terence Carr** [F]) have moved their offices to 16 Great College Street, Westminster, London, S.W.1. The telephone number, ABBey 6686, remains unchanged.

**Mr. C. L. Fairless** [A] has removed from 1 Hamilton Road, Burton-on-Trent, to 'Penrhyn', West Parade, Llandudno.

The address of **Mr. John M. Fox** [A], formerly in practice in Exeter, is now c/o Union Bank of Australia, Western Branch, 451 Murray Street, Perth, Australia.

**Mr. Cecil C. Handiside** [A] has moved his offices to 68 Great Russell Street, London, W.C.1 (HOLborn 5854).

**Mr. R. H. D. Park** [A] has removed to Bowfell Cottage, Brookhouse, Caton, near Lancaster.

**Capt. C. G. Rose** [L], a partner in the firm of **Rose and Lowe**, announces that the firm has moved to 177 Lee High Road, London, S.E.13, and trade catalogues etc. will be appreciated.

**Mr. Mark Hartland Thomas**, M.A. [F], has removed from 46 Sheffield Terrace, London, W.8, to 9 Buckingham Gate, London, S.W.1 (VICTORIA 8484).

The new address of **Mr. J. O. Weller** [L] is 'Hillcote', 6 St. John's Avenue, Morecambe and Heysham (Morecambe 1400).

**Mr. Grey Wornum** [F] removed his office to 19 Queen Anne's Gate, Westminster, London, S.W.1 (WHItchall 2552-3-4) on 27 March last. There he has combined his practice with that of **Sir Aston Webb and Son**, for some years past carried on by **Mr. Edward Playne** [F]. The title of the firm is now **Wornum and Playne** (incorporating **Sir Aston Webb and Son**).

#### PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Associate (43), school trained, varied experience housing, schools, hospitals, public buildings; keen and energetic, seeks partnership or position leading thereto in Southern England. Box 28, c/o Secretary, R.I.B.A.

Good opportunity offered to young man, as partner, in small country town, S.W. of London; should be keen, energetic and fond of a country life. Box 25, c/o Secretary, R.I.B.A.

Licentiate (42) with good general experience, seeks partnership in established and busy practice. Particulars and references exchanged in confidence. Box 20, c/o Secretary, R.I.B.A.

London architects with large practice require junior partner. Excellent prospects for first-class designer with practical experience. Box 19, c/o Secretary, R.I.B.A.

London architectural firm with established staff and good accommodation, are willing to extend limited partnership to young progressive architect able to contribute work in common pool. Box 23, c/o Secretary, R.I.B.A.

Member (46), with wide experience in local government and private offices, seeks partnership in old-established town or country practice; Southern Counties preferred. Box 17, c/o Secretary, R.I.B.A.

Partner required by Associate in long-established practice in North-East with view to taking over. Energy and small capital necessary. Box 15, c/o Secretary, R.I.B.A.

Three members with busy and developing practice in Greater London, anxious to contact other members with view to expanding their Group. Interested parties should be qualified and have had experience in private practice, preferably on their own account, since the war. Office space available at good address. Box 22, c/o Secretary, R.I.B.A.

#### ACCOMMODATION

Three Associates working together, require offices before 1 July, preferably near Victoria. About 400 sq. ft., 2-4 rooms, rent about £150-£200. Box 13, c/o Secretary, R.I.B.A.

Office accommodation required for up to six draughtsmen, Russell Square area of London. Box 16, c/o Secretary, R.I.B.A.

#### WANTED AND FOR SALE

Member requires copy of Chanter's *London Building Law*. Quote price to Box 21, c/o Secretary, R.I.B.A.

Wanted. Architect's adjustable drawing table. State size and price to Box 24, c/o Secretary, R.I.B.A.

Associate has Sir John Burnet Tait and Lorne's Information Sheets Nos. 1-950 (original series) for disposal. Offers to Box 18, c/o Secretary, R.I.B.A.

## The Architects Special Motor Car Insurance at Lloyd's

The Architects' Benevolent Society's Insurance Committee in conjunction with a firm of Lloyd's Insurance Brokers have devised a Special Motor Car Policy for Architects. This policy and the special advantages to be gained from it are available only to members of the Royal Institute of British Architects and its Allied and Associated Societies.

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